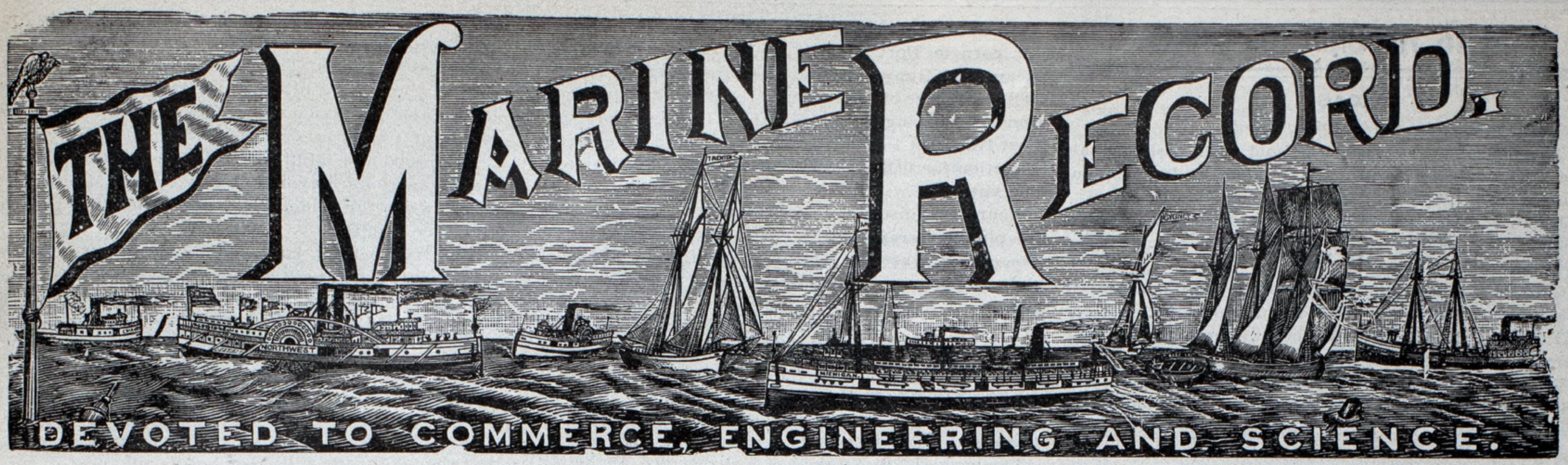


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VOL. XVII. CLEVELAND, OHIO, APRIL 26, 1894. NO. 17

# LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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## IMPORTANT VERDICT SET ASIDE.

The Michigan Supreme Court has reversed the finding in the case of the Cheboygan Lumber Co. vs. the Delta Transportation Co., which gave the plaintiff judgment for $14,500. The action grew out of the burning of a large quantity of lumber through sparks from one of the defendant company's steamer at Cheboygan. The plaintiff claimed that the defendant was negligent in not providing its steamer with a suitable fire screen attached to the smokestack. A law of Michigan provides for such screens, which are commonly known as spark arresters. The defendant continued that this law was of no force or effect as it conflicted with an act of Congress providing for the establishment of a board of supervising inspectors of steam vessels and granting to such board power to make all rules and regulations for steam vessels, and providing that such rules and regulations when so made should stand on the same footing as an act of Congress; that the board of supervising inspectors had made rules and regulations governing the equipment of steam vessels, the appliances to be used thereon, and provided a penalty for the use of any appliance not required by its rules. The defendant contended that the board had not required a fire screen on steam vessels and therefore the defendant could not lawfully place one of these screens on its boat, and that if it did it would incur the penalty provided by the board.

## DOMINION FISHERY INDUSTRY.

The men engaged in fishing in Canada number 67,753, and the fishing gear represents a capital of $8,681,557 permanently invested. There are 1,104 fishing vessels of 40,096 tons in the aggregate. These vessels are manned by 8,899 sailors. Other fishermen number 58,854, who use 31,508 boats and 5,406,800 fathoms of gill nets and seines. These nets are valued at $1,637,707 and to this must be added other fishing gear, such as pound and trap nets, weirs, etc. The lobster plant alone represents a value of $1,343,835, consisting of 682 lobster canneries along the coast of the maritime provinces, using 892,680 traps, etc. More than 100 vessels and 1,000 boats, employing over 3,000 more men, were employed than last year, thus showing an increase of capital invested of $1,000,000.

## NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN AND NORTHWESTERN LAKES.

FORT GRATIOT RANGE LIGHT.—Notice is hereby given that on or about May 4, 1894, the two fixed red electric lights marking the range for entering the head of the St. Clair River, exhibited from the structures erected on the west bank of the river, near the Grand Trunk railway freight house and dock, Fort Gratiot, Mich., will be discontinued and a fixed red lens-lantern light substituted for each.

By order of the Light-house Board:

JAMES A. GREER,
Rear-Admiral, U. S. Navy, Chairman.

Office of the Light-House Board, Washington, D. C. April 20, 1894.

## CUBAN IRON MINES—CONSULAR REPORT.

The principal iron mines of Cuba are between Santiago and Guantanamo, along the south-east coast of the island, within a radius of fifty miles. Three American companies—the Juragua, the Sigua, and the Spanish-American—have in the aggregate, invested about $12,000,000 in plants to develop these mines. Several additional millions of American capital are invested in ships which transport the ore from Cuba to Baltimore, Philadelphia, Perth Amboy, and New York. During the year 1892 the amount of ore shipped from the consular district of Santiago de Cuba was 341,050 tons, and for the first six months of 1893 the amount was 273,000 tons. Two of the three companies—the Sigua and Spanish-American—had shipped thus far very little ore, having not much more than established their plants when the late financial depression in the United States caused the mines to shut down. According to the United States Consul, the ore from the Cuban mines yields from 60 to 67 per cent. of pig iron. But the value of iron ore does not depend alone upon the percentage of iron that it will yield, but also upon the nature of the foreign substances which must be eliminated. These foreign substances are usually sulphur, silica, phosphorus, manganese, alumina, lime, magnesia, together with organic and volatile matter. The Cuban ore is peculiarly free from all foreign substances except organic and volatile matter, which are easily and cheaply eliminated.

Manganese, which is used in the manufacture of steel, is, says the same Consul, also found in an unlimited supply in the same mountain range of Cuba in which the iron ore is found, but between Santiago and Manzanillo, within a distance of seventy-five miles. American enterprise has also asserted itself here by capturing the richest and most available mines. These mines are now being connected with the seaboard by short-line railroads. During 1892 there were shipped to the United States from the consular district of Santiago de Cuba 18,851 tons of manganese, and during the first six months of 1893 the amount transported was 11,640 tons. The Consul is reliably informed that immense quantities of manganese have been discovered in the Caucasus mountains, between the Black and Caspian seas, and that European capitalists claim that they will be able to to deliver manganese in Baltimore at $9 per ton. Cuban manganese has been delivered there the past year at an average cost of about $15 per ton. With the rich deposits of the Ponupo and other mines recently discovered here, the completion of railroad connections with the coast, and the addition of improved machinery now being put up, those interested in the Cuban mines confidently assert their ability to undersell the Europeans in the American markets. The decreased price of manganese will make available many Pennsylvania iron mines which it does not pay to work at present.

## TO STOP LEAKS.

An experiment with a device for swiftly stopping and repairing leaks in the sides of vessels, caused by holes or rents from any cause, was made at Philadelphia recently, by Naval Constructor Nixon, attached to Cramp's shipyard as the Government supervisor for the navy, and a company of other navy officers. The device is known as the Colomes Life and Ship Protector, and is a French invention protected by a United States patent. It comprises a simple mechanical contrivance for applying to the leak or hole and firmly securing it a composition of amorphous cellulose, the absorbent qualities of which cause it to swell in bulk when it comes in contact with water, and causes it tightly to fill in every ragged opening or crevice through which water can penetrate. This new composition is now in use on the cruisers and battle ships of the United States navy on account of its automatic action in case of a leak, and it will be introduced in the future in the construction of vessels for passenger service. The guests witnessed the experiments made at the invitation of the Franco-American Cellulose Co. Three large iron tanks of water were filled by the police tug King, and the water was first let out of a 2½-inch hole, which was stopped in twenty seconds by the cellulose protectors, in spite of 12 feet water pressure. The second hole, 10 inches in diameter, same pressure, was stopped in one minute. The third hole, 21 inches long, average width 5 inches, had its flow stopped within 1½ minutes by the use of three protectors. Constructor Nixon, when the test was over, said: "The experiment was a signal success, and the holes were stopped in remarkably short periods. The sailor on a man-of war henceforth need dread no sudden sinking on account of a projectile. By the use of cellulose almost any leak can be stopped before an appreciable quantity of water can rush in."

# NEWS AROUND THE LAKES.

## CHICAGO, ILL.

*Special Correspondence to The Marine Record.*

The schooner America was sold at Marshall's sale Tuesday morning to Miles Barry, of the Independent Tug Line, for $900.

Lumber freights are growing scarcer and it is expected that the fleet will shortly have to tie up, owing to lack of cargoes.

Captain William Dandy has been appointed master of the schooner Sunrise. She is loaded with oats for Sarnia and leaves here Wednesday morning for that port.

The O. S. Richardson Fueling Co.'s floating derrick "Spring Heel No. 2," has had a busy time fueling up steamers in the river, before and since the opening of navigation.

Grain freights are firm at this writing; 1 cent per bushel on wheat, oats or corn to Port Huron or Buffalo. Lumber freights are eleven shillings per thousand feet from Menominee, Manistique and Manistee, which is one shilling lower than last season, yet, shippers are trying to make freights still lower.

The steamer Charles Stewart Parnell, captain, Patrick Griffin, left here Friday night for Port Huron, with corn at one cent freight.

At Miller Bros'. shipyard the steamer Emma E. Thompson was in dock for bottom calking, the tug Monitor for a new wheel, the schooner Truman Moss for repairs to center board box and decks, the steamer City of New York for some new holding down bolts, the schooner D. S. Austen to have a leak stopped, the steamer Wissahickon to have shoe repaired and wheel fastened.

D. E. Clow, shipbuilder, has given the schooner Waukesha some new stanchions and rail and re-calked her ceiling and center board box. Captain P. Peterson has given the schooner Mystic new stanchions and rail on the port side, new floor, ceiling, some new frames aft and repairs to keelson.

H. B. Burger, shipbuilder Manitowoc was in this city Tuesday, on business. He says the rush of work which has been doing at his shipyard for the past six or seven weeks docking and getting ready steamers and schooners for their season's work is nearly ended.

The steamer Parks Foster, captain, George E. Merritt, the first of the Owen Line to go into commission, left South Chicago on Friday last with 97,000 bushels of corn for Buffalo.

The W. S. Bogle Co. are building a clam shovel derrick for a Buffalo firm to handle sand from boats to the dock; all the timber work is extra heavy and of Norway pine. The boom is of steel and one hundred feet in length. The derrick is equipped with a 10 by 12 double high speed hoisting engine to handle the bucket, also a 7 by 7 double reversible engine for swinging the boom and connected to propelling power for moving derrick on track. They are very busy at their works getting out six double 9 by 12 hoisting engines, also six of their latest designed clam shell buckets and general machinery for two Chicago docks.

The Chicago Board of Marine Underwriters, Friday afternoon, elected the following officers: President, Wiley M. Egan; vice-president, Calvin Carr; secretary and treasurer, James B. Kellogg; executive committee, Hugh McMillan, James Carry Evans and J. J. Rardon.

The Holland & Chicago Transportation Co. will start out the steamer Glenn, which they have chartered as their first boat this season. She will leave Holland for Chicago, Monday evening, April 30, and make tri-weekly trips. The company's steamer City of Holland will commence running May 10th.

The Anchor Line steamer Wissahickon arrived here Sunday, in tow of the steamer Juniata of the same line, which had towed her from Milwaukee. The wheel of the steamer had become loose and her shoe was knocked off.

About sixty steamers and schooners laden with lumber arrived here Sunday and Monday.

The United States and city engineers and harbor masters measured the Halsted street lift bridge Saturday. The distance from the surface of the water in the river and the bottom of the bridge when raised to its greatest height was found to be 155 1-10 feet. The water in the river was one foot higher than usual when the measurement was made and it is supposed that the loftiest masted vessel entering this port will go under it safely.

Instead of Capt. Frank A. Root of the Minnesota Line succeeding Cyrus Sinclair as local inspector at this port, Charles A. Richardson is announced as the appointee. Ex-Mayor Cregier is after Capt. Wescott's scalp or position as supervising inspector of this district, with main offices at Detroit, though very shortly it will be here, where it ought to be.

On Saturday, the steamer John Duncan was chartered for corn to Port Huron at 1⅛ cents. Monday, the steamer Brittanic was chartered for wheat to Kingston at 3 cents, free of canal tolls; the steamer Spencer and Consort Pennington and steamer Lansing for corn to Port Huron at 1 cent; the schooners Ford River and Resumption for 40,000 bushels of wheat to Milwaukee at 1⅛ cents.

Henry Dickinson was here from Milwaukee Saturday, completing arrangements for a new passenger line between Milwaukee and Chicago. No freight will be carried. Daily trips will be made and a first-class service kept up.

WILLIAMS.

## BUFFALO, N. Y.

*Special Correspondence to The Marine Record.*

The steamer City of Glasgow has nearly 1,000 bushels of damaged corn, caused probably by sweating. The damaged grain will be surveyed and the loss assessed.

The barge L. W. Drake has just received at the Mills dry dock a new stem and some keel, besides re-fastening and calking. The Lycoming gets a new mast there this trip.

Capt. Samuel Golden, who was master of the Harrison last year, will take charge of the Idlehour this season, to ply between this port and Elmwood Beach, Grand Island in the excursion trade.

There is a prospect of a coal famine in a short time and the coal companies have raised the price of fuel to steamers to $2.75. It is thought that the present stocks will be used up in about two weeks. Were the lake business brisk the present supply would not last more than a week.

It is not thought that the shovelers' union will make the reduction of 25 cents per 1,000 bushels of grain asked for by vessel men. The elevator men have granted a concession of 25 cents in the charges, making the rate $3.75 for 1,000 bushels and put the steam shovels at work again.

One of the best managed, equipped and kept up lines out of this port is the Northern Steamship Co. The fleet of six boats look as well now as the day they were launched. Capt. Killeran, one of the ablest masters in the line has been promoted to shore duty as marine superintendent, a position better known, perhaps as that of ships-husband, and the choice of manager Gordon in this connection is pronounced by experienced men as being a most exact one.

## TORONTO, ONT.

*Special Correspondence to The Marine Record.*

It has now been definitely settled that the steamer Lakeside is to leave for Lake Erie on May 3. She is to ply between Port Stanley and Cleveland in connection with the Walkerville & Port Stanley Railway all summer. Hiram Walker, the distiller, owns the railway and the boat. The Empress of India will run to Port Dalhousie, and an arrangement has been made for the Lakeside to turn her trade over to the Empress when she leaves for Lake Erie. Rivalry between the Garden City and Empress this year will be keen. Last year these two, with the Lakeside, worked in unison and divided the profits after the season closed. Now that the combine has been broken, the boats will run in opposition to each other. The Garden City will begin her season on May 10, and will run direct to lock 2, St. Catherines, leaving Toronto at at 3:40 each afternoon and arriving at St. Catherines at 7 o'clock.

Capt. McIlwain, of St. Catherines, inspector of hulls for the marine underwriters, has surveyed the schooner Erie Belle, which has been extensively repaired by her owner, Capt. Manson, during the winter.

Some Windsor parties are contemplating putting the steamer City of Windsor on the St. Catherines route, but it was thought that she is too slow a boat for that run, and, besides, she requires a depth of nine feet, which would make it well nigh impossible for her to navigate the shallow waters of the old canal. The steamer City of Windsor was built at this port in the Polson shipyard a few years ago.

## COLLINGWOOD, ONT.

*Special Correspondence to The Marine Record.*

The many boats that have wintered here have all undergone a thorough overhauling. No particular changes have been made in the G. N. T. Co's steamers. The Baltic will not run this year, but the others will be officered much the same as last year, viz: Pacific, Atlantic and Northern Belle by Capts. Campbell, Foote and Wilson; and will run on the same routes as last year, viz.: Pacific and Atlantic to Sault and Mackinaw, and Belle to Perry Sound and North Shore.

The North Shore Navigation Co. have been doing considerable re-building during the past winter. The steamer Favorite's cabins and state rooms have been remodeled and enlarged. She has also been given an electric light plant. The City of Midland has been lengthened by about 30 feet and is now a fair rival of her sister ship, the City of Collingwood, which has also been much improved in the strengthening of her hull by the addition of steel arches. The Black Liners will be captained as last year, viz.: Collingwood, by Capt. Bassett; Midland, Capt. Le France; Favorite, Capt. Jacques; Manitou, Capt. Cameron; City of London, Capt. Playter. The Collingwood and Midland will ply on the Sault and Mackinaw route; Favorite, Parry Sound; Manitou, Penetang, while the London will carry fish for the Georgian Bay Fish Co.

The Dry Dock Co. have had a busy winter. The new tug John J. Long, built by this company, will be launched about the 1st of May. The shipyard also had work all winter. The veteran shipbuilder, Mr. Alfred Morrill, has two new tugs and a steam yacht ready to launch in a few days, and has also a contract for building two more tugs as soon as possible.

This has been the best winter season around the docks Collingwood has ever had, and the prospects are that the lake trade will also be in advance of former years. The liners are all ready to sail. The Atlantic will be the first boat out and will be followed by the others this week.

The tug Hector McGinn was launched from the yard of Alfred Morrell on Thursday last. The day being fine many citizens witnessed the event which went off smoothly. Two other launches take place in a few days from the same yard.

## CLEVELAND, O.

*Special Correspondence to The Marine Record.*

The steamer William Edwards and schooners Page, Foster and Golden Age, will lay up at Huron until business becomes more active.

Congressman W. J. White, of the twentieth district will not be a candidate for re-nomination to the next congress, on the other hand, Tom L. Johnson is decidedly "in it."

The two twin screw passenger steamers building at the Globe shipyard for the Northern Steamship Co., represent an investment of $1,500,000. Everyone is now willing to admit that J. J. Hill has a "nerve" to place such feeders for his railroad.

Capt. Samuel Mitchell, of Negaunee, Mich., on account of whose refusal to pay Cleveland taxes on his share of the steamers J. H. Devereux and William Chisholm the boats were libeled, went to the office of the county treasurer on Wednesday and paid his taxes under protest.

At the last meeting of the season of the Shipmasters' Association, Capts. James Stone and J. A. Holmes were appointed a committee to draft resolutions to be sent to the Secretary of the Treasury, requesting that passing signals in fog be allowed on the lakes. Other lodges of the association will be asked to make the same request.

Capt. George Y. Dayton seems to be in no hurry to secure an appointment this season, as he has become interested in a large iron ore deposit on the south shore of Lake Ontario, between Charlotte and Sodus Point at Park Bay, N. Y. The ore is said to be very rich, and in the locality of the lake shore, so that loading facilities are the chief improvements required to develop this shipping point for another iron ore mining industry on Lake Ontario.

The present scale of wages as well as the grading of the boats in the schedule of tonnage is unsatisfactory to engineers, and it has been suggested that the scale ought to be revised according to horse power developed instead of on a tonnage basis. It is argued that if wages were kept up freights would also be raised and a better time all along the line would result. Engineers also feel that their recent communication to the committee of the Lake Carriers' Association was not fairly dealt with, as they wanted to meet their owners and talk the wages scale fairly over with them.

Tug lines will seek work this season and the V. O. T. Co., will have brisk competition with the Cleveland Towing Co., managed by L. P. & J. A. Smith. As regards charges, Capt. W. A. Collier, manager of the Vessel Owners' line, has not given out any rate, but says he is satisfied that he will get his share of the business, which means that he will meet any cut and probably go it a shade better. It is almost certain that the practice of running up the lake fifty miles after tows, which was done a number of years ago, when three lines were running here, will be repeated.

Lorain, situated twenty-eight miles west of this port and thirty miles east of Sandusky, is disposed to "put on frills," because the Hawgood & Avery steamer S. S. Curry walked away with 3,500 tons of coal out of that port last week. Black River is credited with an average depth of 17 feet and is navigable four miles from its mouth, so that there is nothing to prevent Lorain from early rivaling Toledo. The C. L. & W. R. R. handles an increasing quantity of iron ore each season and other industries, notably the location of the Johnson steel mills, betoken a rapid awakening of this south shore port after half a century of somnolency.

On Monday the new oak tug boat Pinola was

launched from the ways opposite the Globe Iron Works ship yard. The christening ceremony was gracefully performed by Miss Cassie Jones, daughter of the president of the Standard Contracting Co. The little steamer has been constructed by Mr. Thomas and others for the Standard Contracting Co., of this city, the owners having supplied the materials for her construction. Her principal dimensions are, length 67 feet, breadth 13½ feet, depth 7 feet. The engines are double high pressure, each cylinder being 9½ x 10½, the boiler is Hereschoffs, ested for a pressure of 300 pounds and the wheel is 5 feet in diameter. The fine fair lines of the little craft were greatly admired by the spectators of the launch and there is little doubt that she will prove to be a good sea boat as well as a fast, powerful and handy tug. She is built extra strong and highly finished and will cost about $5,000. The lines and general arrangement of equipment were designed by Joseph R. Oldham, naval architect.

### KINGSTON, ONT.

*Special Correspondence to The Marine Record.*

The steamer James Swift will start her regular trips to Ottawa on May 1.

One of the neatest launches that ever took place at this port was that of the M. T. Company's new schooner Selkirk, last week. The Selkirk is supposed to come next to the schooner Minnedosa in rating, and is considered far ahead of the schooner Winnipeg, built at the shipyards last year. She is 180 feet long, with 38 feet beam and 14 feet hold, rigged as a three-masted schooner with sails. She is steel strapped, and her cabin is built of British Columbia cedar. She will be put on the route between Kingston and Lake Superior. Capt. James Fleming, late of the Glenora, will take charge of her. We hear little about classification surveys and yet our tonnage secure all the insurance they want on hulls, freight or cargo. The Rosedale was built to English Lloyds, but that class can not stand since she had thirty feet put into the middle of her, however, it seems to make little or no difference whether classed or unclassed as all our tonnage is known to be well kept up.

The steamer Magnet has been fitted out for the Hamilton-Montreal freight and passenger route in regular palace style. No expense has been spared in the purchase of her passenger equipment. Her officers are: Master, Hiram Vaughan; mate, F. Graves; engineer, Thomas O'Reily; purser, Harry Footra; steward, A. W. Stevenson.

### DETROIT, MICH.

*Special Correspondence to The Marine Record.*

The Dry Dock Co. has placed a new stack in the steamer Schoolcraft, overhauled the furnaces of the Progress, and are overhauling the machinery as well as calking the decks of the Volunteer.

C. W. Norton chartered the steamer John W. Hall this week for wheat to Oswego at 3½ cents.

Capt. J. M. McGregor, a resident of Detroit for thirty years, and a man well endorsed by vessel owners, is the most likely candidate for local inspector of hulls of steam vessels at this port, but about the enforced retirement of supervising inspector C. H. Westcott, it just keeps people guessing around here, as he is one of the most competent men we have ever had. No politics, ay!

### DULUTH AND SUPERIOR.

*Special Correspondence to The Marine Record.*

The American Steel Barge Co., it is said, this year will probably arrange a plan of insurance within the company on their vessel hulls. This idea was suggested last year but was not carried out. The Christopher Columbus is being refitted and will leave Superior June 1 for Chicago.

Admiralty lawyer H. R. Spencer will shortly issue a text book on admiralty law consisting of over 500 pages. It will deal only with collisions between vessels. There is not a reliable and modern American work on the subject of collisions, and hence the forthcoming volume ought to be in good demand. Mr. Spencer has been engaged on the work for three years, and the volume will treat on every phase of collision law relating to navigation on the lakes, rivers and high seas.

### WEST BAY CITY, MICH.

*Special Correspondence to The Marine Record.*

F. W. Wheeler & Co. have closed a contract with a local syndicate to build a steamer 182 feet keel with a carrying capacity of 750,000 feet of lumber. The new boat will have compound engines and is contracted for delivery by September 1st so that she will be ready for the cream of the season freight rates.

Messrs. Monroe, Nichols and Stevens, of Charlevoix, who bought the steam barge Ida Torrent, after she had burned and sank there last fall, are said to have obtained a good bargain. Examination shows the hull to be in good shape, and the machinery uninjured.

## CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

### A "DOUBTING THOMAS" CONVINCED.

SOUTH CHICAGO, ILL., April 21, 1894.

*To the Editor of The Marine Record:*

As a test, just to see if your journal also really circulates among the working body of lake-faring men will you please suggest that Dell Tillman, formerly steward of the Christopher Columbus, send his address to this company?

Last Christmas we received a letter and a parcel from the old country addressed to him in our care and we are anxious that Dell should have them but we do not know his whereabouts. Yours truly,

CHICAGO SHIP BUILDING CO.

SOUTH CHICAGO, ILL., April 21, 1894.

*To the Editor of The Marine Record:*

In *re* whereabouts of Dell Tillman: Shortly after you published the item stating that we wished to know his address, he showed up here and said a friend of his saw the item in THE RECORD.

Evidently your journal reaches the people it claims to. Thanking you for your kind attention, we are

Yours truly,

CHICAGO SHIP BUILDING CO.

### MOVEABLE PROPELLER BLADES.

LONDON, April 11, 1894.

*To the Editor of The Marine Record:*

I have been favored with a copy of THE MARINE RECORD for February 22nd, in which you refer to my efforts in relation to the introduction of screw propulsion by non-reversible engines. Permit me to thank you for your kind expression of appreciation. I have, as you are probably aware, been engaged on the investigation and propagation of this matter for some years past. Our Cleveland friend, to whom you refer in your editorial as having submitted a suggestion of the kind, a year ago, to the authorities in his neighborhood should not have allowed himself to be sat upon, squelched, or even dampened by mere opinions—which possibly were prejudiced. Unless the gentleman referred to had tried—or at least fully studied—the system in its entirety, of what possible value could their opinion be? Such authorities delay the march of improvement by prophetic utterances which are (sooner or later) proved to be erroneous. Will any American engineer—who has fully studied and is sure of his subject—kindly tackle such in future? He will be doing a service to his country and to the world. One "wet blanket" said, for instance, that he would eat a stewed engine wheel for his breakfast when a locomotive ran at 20 miles an hour; another that the Suez Canal could never join the Mediterranean to the Red Sea; another that steam navigation across the Atlantic could never be made to pay; another suggested (in derision) that the dome of St. Paul's would do for a gasometer; yet they were all clever men—as far as their knowledge extended, but they were prejudiced and a little too previous. We all of us know so little, and if we want to really know more we must study each subject fully for ourselves. The best authorities err when they look at a thing from a wrong point of view; and all the superstructure that they build upon a wrong basis is better unlearnt by the modern engineer.

I take the liberty of sending you a copy of the paper of mine to which you referred. I beg you will do me the favor of reproducing it in full for the benefit of the maritime service. Your readers will then see that a comparison of the full and complete system with the mere suggestion of so feathering the screw blades is only possible to the class of mind that only knows enough about a thing to know that for reasons peculiar to itself, "it don't want it." But if a thing is right and can be proved so, the public, both owners and users, will have it in time. You will perceive that in my paper I have noted the great benefits attainable by reversing the direction of motion of nothing but the ship—not even the metal in the screws themselves.

ROBERT MCGLASSON,
Honorary Member of the Institute of Marine Engineers.

### TIME BALL AT CHICAGO.

NAVY DEPARTMENT, BUREAU OF NAVIGATION,
BRANCH HYDROGRAPHIC OFFICE,
CHICAGO, ILL., April 24, 1894.

*To the Editor of The Marine Record:*

As inquiries at this office show that the time signals are not fully understood, will you kindly notify lake navigators through your columns that the U. S. Naval Time Ball is dropped from the top of a flag staff on the dome of the Masonie Temple, corner of State and Randolph streets, Chicago, by the electric transmitting clock of the Chicago Branch Hydrographic office, situated on the 16th floor of the same building?

The time ball is hoisted to the top of the staff, 350 feet above the level of the lake, five minutes before noon (11:55 a. m.) Central Standard time every day (Sundays excepted); remains at mast-head five minutes, and is dropped by electricity at the instant of noon.

Should any accident occur by which the time ball is dropped before the exact instant of noon, it will be hoisted again immediately and left up until five minutes after noon (12:05 p. m.) and then be slowly lowered instead of being dropped In case the time ball should fail to drop exactly at the proper instant, it will be kept up until five minutes after noon (12:05 p. m.) and then be slowly lowered as before.

The exact instant that the time ball starts to drop from the mast-head is the time of noon. Lowering the time ball slowly indicates that it is five minutes after noon, and the signal current, sent by the Transmitting Clock, has, through the accident, failed to operate the electric detaching apparatus at the instant of noon.

The Chicago Branch Hydrographic Office is a government institution, designed to collect and distribute information gratuitously. It was established by the United States Navy Department for the free use of the public throughout the basin of the Great Lakes, and is supplied with a complete set of charts and sailing directions covering every part of the known world. All persons interested in lake navigation are invited to visit the Branch Hydrographic Office in Chicago, where they can obtain all the latest information relating to the navigation of the lakes, as well as similar data for all the navigable waters of the globe; weather conditions, reports of ice, reports of currents, recent chart corrections, etc. The office is supplied with a complete set of nautical, meteorological and electric time instruments, and also with books, papers and pamphlets on nautical matters, including the use of oil for the preservation of life and property in storms at sea, the instructions of the Life Saving Service, lists of light-houses, beacons and buoys, etc., which may be consulted and examined freely. It is intended to establish a similar Branch Hydrographic Office, with time ball, at Cleveland at an early date.

Hoping that the explanation of the "naval time service" may be of use to your many readers, I remain,

Very respectfully,

GEORGE P. BLOW,
Lieutenant, U. S. Navy, in charge.

### HELM SIGNALS IN FOG.

CLEVELAND, O., April 24, 1894.

*To the Editor of The Marine Record:*

In one of our daily papers the other morning I noticed a caption like this, "The Legislative Committee of the Lake Carriers approve of the new rule." I later heard that only four or five of this committee were present—their practicability putting the mon a par with the Board of Supervising Inspectors, who are making pilot rules for our government. Let me quote a passage from Holy Writ: "Forgive them, for they know not what they do." All of our intelligent, active, practical masters and pilots, whose every thought night and day is for the safety of the ship in their charge, are unanimous in declaring that this is a most dangerous rule, one that is bound to increase the number of collisions on the lakes instead of decreasing them. These men ought to be the best judges of this thing. Among them are those who are the peers of any in intellectual ability, and so in this, their life vocation, should know which is the better and safer rule to practice. It is said that this has always been the law, but that it has never been adopted here upon the lakes. This is curious; our Board at Washington have let us run along since 1885, a period of nine years, unlawfully! This should in itself start us thinking about the ability of such a board, made up of engineers who in practice know nothing of navigation, but do issue to us instructions that are notoriously wrong. This Maritime Conference, which we remember well and when it was held and then the talk about it, had no thought of formulating rules for lake navigation at that time. We were considered a distinct, independent body of water, or "ponds," as these fellows put it. During the last two or three years some judges have in their decisions called these lakes the "high seas," so that laws made for ocean navigation are fastened on us, much to our disadvantage. We have an entirely different navigation—in many ways very much more dangerous—than on any other body of water in the world. Need I enumerate why this is so? A few things might be said about the number of craft all steering in the same course—identically from point to point, going and coming—the speedy steamers that when checked down are then going like the wind, the numerous tows there are—about as many steamers going with tows behind them as there are running alone. How are these to stop and back as the rule says if there is a twenty or thirty mile breeze of wind blowing after them; or if coming down Lake Superior in a snow storm, then the liability to getting bunched as they do at times around the Straits of Mackinac and between White Fish Point and Iroquois. These are only a few things. We have asked for a distinctive fog whistle year after year; our best men, our best legal talent, were in favor of it when a fog whistle is heard a passing signal be used—this would give almost absolute safety; no mistake could then occur. I hope the Legislative Committee of the Lake Carriers will reconsider their action and seek to have this rule suspended for this season, then next winter let our best representative pilots hold conference with the Supervising Inspector and remodel this. Congress will without doubt devise such laws for these Great Lakes, laws that may be for the best interests of safe navigation. W. S. M.

### NEW TONNAGE.

The only lake built vessel to which an official number had been assigned by the Bureau of Navigation, Treasury Department, Washington, D. C., during the week ending April 14, was the steamer Normandie, 567 tons gross and 430 tons net, hailing from Milwaukee, Wis., and built at Green Bay, Wis.

## CLASSIFICATION REGISTERS AND BOOK OF RULES

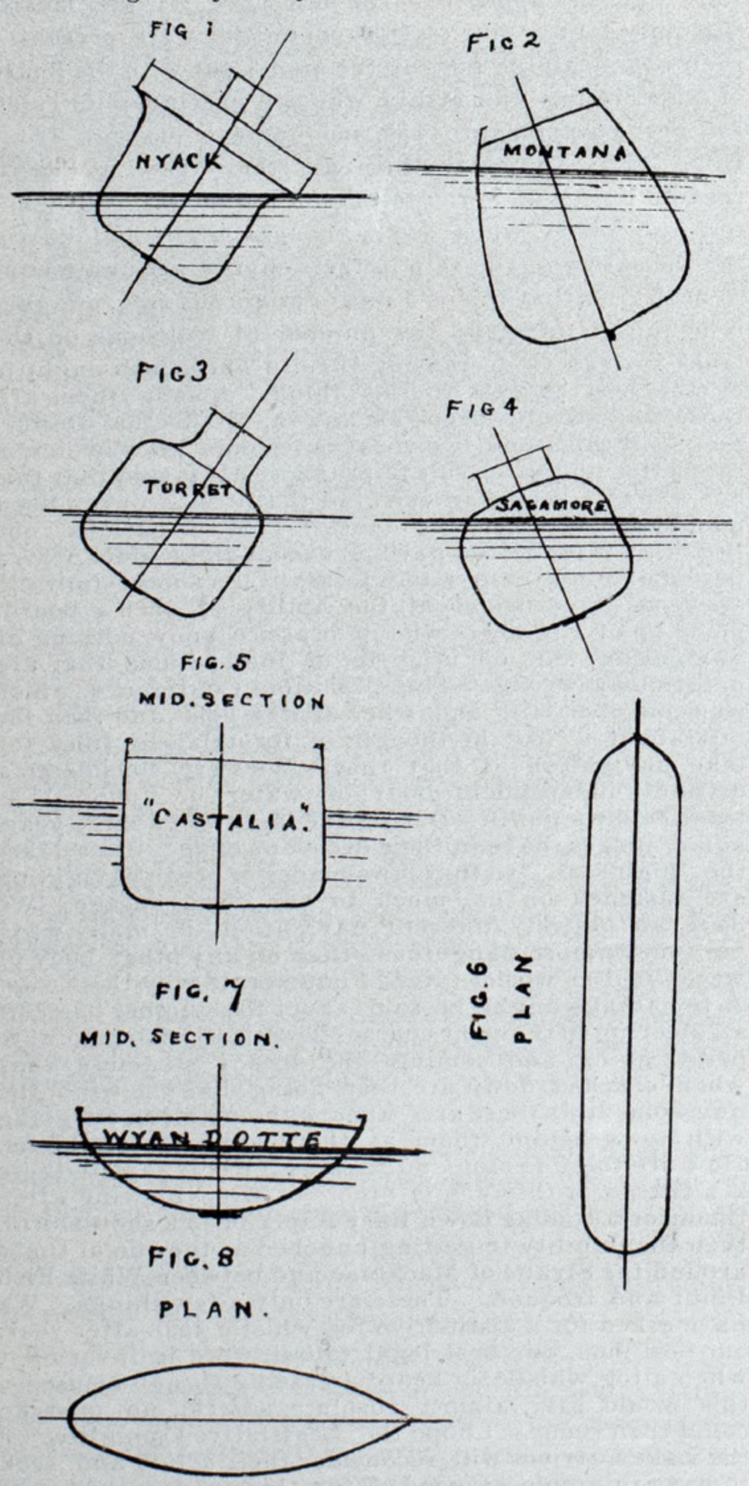
FOR THE CONSTRUCTION OF STEEL VESSELS AND THEIR BASIS FOR SCANTLINGS.

*(By Joseph R. Oldham, N. A. and C. E. Cleveland, O., Member of the Society of Naval Architects and Marine Engineers.)*

PART NO. 2.

Suppose a vessel had to be classed by three or four of these *societies, associations, committees or corporations—and I may say that I have often surveyed steamers which were classed in three books—let us see the numeral evolutions that hull would have to perform. Say the principal dimensions as per the Great Lakes practice are 300 by 40 by 26; now by one rule her number for shell plating would be simply 308; by another it would be 27,000; by another 2,242; by another 2,080; by another 5,100; by another 64. There are other varieties in print but perhaps these will suffice. Now, with ordinary vessels some of these several initial rules may bring about nearly the same result; then why all this circumlocution, why not adopt the same means to attain the same end? If it is not possible to get at the correct principle, I think we might attain more closely to it by clearly showing which system is the furthest from being accurate. This would not preclude liberty to vary the scantlings or details of arrangement as the several committees might think fit, but it would have a tendency to encourage good models by arranging the numerals or tonnage when unanimously computed with that end in view. It would seem that all are about agreed as to where the breadth should be measured, but if the whole matter were more carefully considered there would be about as much excuse for varying the breadth measurements as for varying the depth measurements, for as you all know when a ship rolls greatly the beams and frames at side may each frequently assume the same degree of inclination from the vertical; moreover, we have ships in which the top sides turn largely inward, and others which flare out are not unknown.

The following outlines of actual ships, not speculations of ingenuity—may serve to illustrate this:




Now, I submit that the extreme breadth measurement might be a fair one to regulate the ratio of scantlings of such a vessel as that illustrated by the section and plan numbered 5 and 6 respectively, but for such vessels as the figures 1, 2, 3, 4, 7 and 8 represent I think the scantlings of bars should depend on the mean girth or breadth and on the actual displacement for plating.

If a slight digression is permissible, I would say I am rather of opinion that much of the weakness or dangerous vibration in long modern steamers is due to the limberness of the structure, for the scantlings are not only much lighter than was common in the old first-class liners, but the material is more elastic than formerly, the plates are broader and the thin steel decks of long ships are frequently unsupported by wood; that is, by three or four inches of teak or pine on top of the steel, or other fore and aft stiffening. I have found wood well fastened to thin steel to be of great use in resisting compression. Moreover, to accommodate the stevedore, beam stanchions are frequently omitted, though the hatchways are larger than formerly, and less time is available for trimming, consequently the load is not so evenly distributed as when we were content to move more slowly. With reference to the lower flange of the girder, I may add that much general benefit has resulted from sheathing the bottoms of steamers with elm.

Parenthetically I may say, that in my opinion, many of our large lake steamers have too much buoyancy above the water line, due to form, for the height of freeboard with which they are navigated.

As regards model, let me say that I cannot bring myself to believe that a very full ship will be as strong as a very fine ship of the same midship section and length, if both are constructed of the same scantlings, though I quite believe that, given two ships of the same proportionate dimensions and of the same displacement, the full ship will be quite as strong as the fine one built of the same scantlings, but in the former case I have often found the full ship to be the weakest, because she carries a greater load.

This should further tend to show that it would be more accurate to make the principal scantlings of ships dependent on displacement rather than on internal capacity or linear measurements.

Now the main frames at one time—that was before web frames were generally required, and transverse bulkheads were few and far apart—were the great feature of transverse strength, but this is, in my opinion, no longer the case, for good web frames are now required at frequent intervals by all rules, and transverse bulkheads are generally stronger and more in number than was common a few years ago; indeed as many steamers are now being constructed, I think the function of the frames will consist mainly in forming a connection between the bulkhead plates and web plates respectively, to the shell plating, and for stiffening the latter. Hence, it appears to me that the vertical framing should be spaced so as to make the side plating of all sizes of vessels about equally rigid. I should say that the half girth would give a proper number for ascertaining the sectional area or weight of frames were it not that I propose spacing the framing according to the thinnest shell plates at midships (that is the side plating) and that being so I think the most equable number we can find is the product of the half frame mean girth by the length on deck, unless the distance between the centers of buoyancy of the fore and after bodies could be substituted for the length on deck. To explain, if we took the depth simply, a square box form of section would have no heavier framing than a ship having a circular or elliptical form of midship section if the depths were the same; now it needs no argument to prove that such a basis for framing is egregiously defective. Then the girth alone would not produce a fair ratio, for a long ship (and one consequently heavily plated) would have less weight of frames than a short ship having the same midship section, on account of wider spacing in the larger ship; in fact a ship of say 5,500 tons may class in several registers with less framing than a ship of about 5,000 tons, both being of the same depth. Tonnage, at least approximate register tonnage, I consider is out of the question in connection with the framing, except as it affects the spacing by variety in thickness of shell plating.

The floors should be treated as beams, i. e., according to their length, which I measure from bilge to bilge at 1-10 of the moulded depth above the keel. I know this is an innovation unsupported by precedent; but when the point of abutment is some two or three feet inside of the extreme breadth, it cannot be correct to assume the length of the floors as equal to the extreme breadth.

The load draft of water should be included as a factor for determining the strength of floor plates, because the difference in pressure on the bottom of a large vessel when loaded as they are on these lakes, and as they are commonly loaded on the coast, amounts to about three or four thousand tons. I think such a difference in load ought to be taken directly into account; indeed by my practice it is indirectly considered through using the load displacement to regulate the scantlings of shell plating.

The floor plates in our lake steamers are about 25 per cent. shallower than is required by the principal register rules, but then all our screw steamers have continuous double bottoms, consequently their floors will stand a large reduction, especially if the upper bottom, as it should do, approaches nearly to the strength of the lower bottom, both in thickness and fastening; this has been provided for in the local register.

In two books the scantlings of floor plates depend only on the breadth of the vessel; now, by this rule the steamer Ketcham, which is 234 by 41 by 13½ and 909 tons register, would require the same floors as the steamer Adriatic, which is 437 by 41 by 31 and 2,458 tons register. This rule may be simple, but it is hardly accurate or systematic.

By my rule the latter vessel would have floors 15 per cent. heavier than the former. The actual dimensions of the floors in the two vessels is, Adriatic, 27 by 11-16; Ketcham, 18 by ⅜. I think I may now dismiss the analysis of this portion of the scantlings without further remarks, as the shallow transverse floors are becoming unfashionable on account of the superior merits of what is known as the † longitudinal system of construction.

With regard to web frames, I am of opinion that the main breadth and thickness of these should depend on the depth from the tank or top of floors (in the absence of an upper bottom) to the first steel deck above, and then on the distance between the several decks. Of course when there is only one deck the main breadth and thickness will be arranged by the depth from the tank top or floors to the deck, and the web frames will then be at their maximum.

The spacing of the web frames should be largely dependent on the arrangement of hatchways, gangways and transverse bulkheads, but should not exceed twelve frame spaces apart if the shell plates are not less than twelve frame spaces in length.

To consider the shell plating, at least three of the books base these scantlings on the approximate register tonnage or internal capacity below decks, regardless of the draft of water or displacement of the hull. So we find that the two vessels may be similar in all respects, except as to depth, in which case the deepest vessel may, and frequently is required to have her sides and bottom plating and some other scantlings generally thicker and heavier than her shallower sister ship.

Now, as a ship may and does frequently perform such duties as a bridge or beam—indeed she may be looked upon as a dynamical bridge or beam—the strength of which vary in the ratio of the square of the depth, this cannot be a sound basis on which to found the strength of the shell plating of a ship.

TO BE CONTINUED.

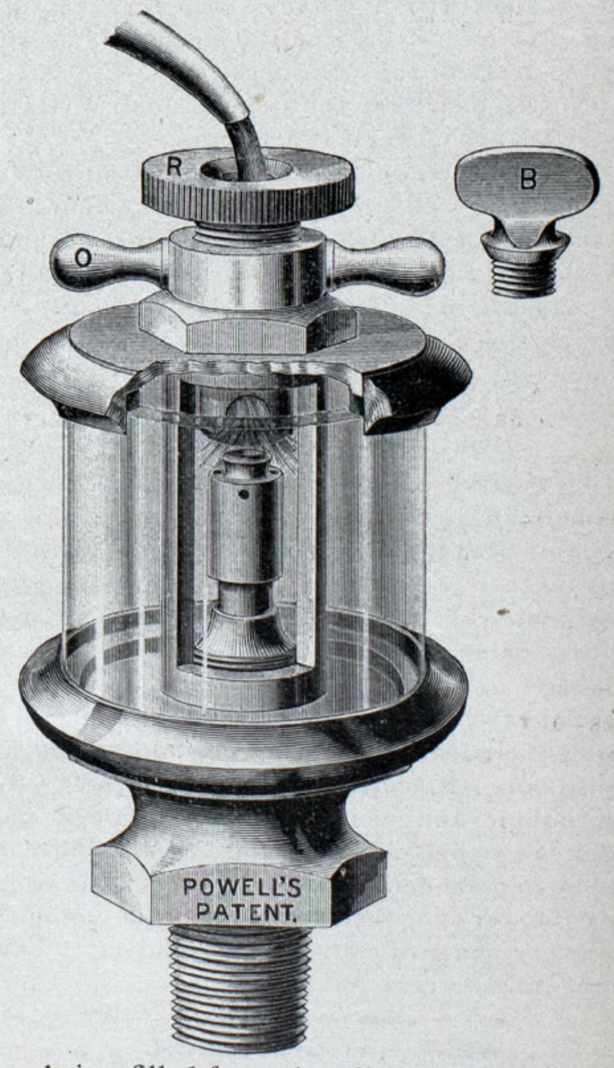
*There are also the following shipping registers which were omitted in the chronological table, as the general particulars of their establishment and personnel were unknown to the writer: Nederlandsche Vereeniging van Assuradeuren, Registro Italiano, Veritas Austro-Ungarico, Veritas Ellenico.

†The longitudinal or cellular system of double-bottom construction was inaugurated in a general way by the builing of the iron screw steamer Fenton, in 1876, by my friend G. B. Hunter, at Sunderland.

## POWELL'S AUTOMATIC CRANK OR WRIST PIN OILER.

ILLUSTRATED.

This new style of crank pin oiler is an improvement on the old one formerly manufactured by the Wm. Powell Co., Cincinnati, O. The central adjusting screw, R, has been enlarged sufficiently to afford diameter enough to form a passage for the oil when refilling. When refilling, the filling cap or plug, B, is removed,




the cup being filled from the oil can as shown. After filling, the plug, B, is replaced and the lift of the valve to deliver the proper quantity of oil is adjusted by means of the central adjusting screw, R, which is then secured in place by the lock nut, O. The cup can be refilled at any time without altering the adjustment, which will be found a great convenience as compared with the older form. These oilers are made in sizes ranging from 1¼ to 3½ inches diameter, of glass from 1⅛ to 4 inches in height, and of capacities from ½ ounce to 1 pint.

## SCREW PROPELLERS, REVERSING SCREW PROPELLERS, AND NON-REVERSIBLE ENGINES.

By Mr. Robert McGlasson, Hon. M. I. M. E.

*Read at Cardiff, England, December 7th, Stratford, London, England, December 11th, 1893, and at Bombay and Calcutta.*

Part 1.

I have the honor to offer a few remarks upon that time-worn subject, the screw propeller, and on the benefits which would follow the adoption of reversing screw propellers operated by non-reversible engines.

It has been my pleasure—more or less to my profit—to have waded through the literature of, and correspondence upon this subject, and I have made a few experiments and deductions, the results of which I will shortly summarize.

Many men of eminence have advocated theories and formulated calculations on propellers. I respectfully submit that many have been misled by their mode of experiment, others by starting on a wrong basis, and others by making comparisons which do not apply to the real conditions which it is absolutely necessary to study and allow for.

Some have experimented with fixed propellers revolving in one position in a tank, and treated the appearances and results as if such would apply to propellers running normally with the vessel. Some set themselves the impossible task of designing a fixed propeller of maximum efficiency under all circumstances and conditions. Some wisely give their opinions in plain language and plain figures throughout; others do the same until the (so-called) "mathematical" bogie crops up, in which case the opponents sooner or later get involved in a tangle of mathematical gymnastics, and seek for "constants" where all is inconstant.

The fact is that the propeller is the chameleon of marine engineering. The expressed opinions of the most honest and competent experimenters upon the theory of action of a fixed screw propeller vary with the point of view from which they take up their subject. With a screw of fixed pitch everything depends upon the one point of view from which they look at it. We might as well search for a fixed spanner to suit all sized nuts, or a sail area that will suit all winds as for a fixed propeller which will suit all conditions.

I respectfully submit that the screws are of necessity continually operating under altered conditions of running, and that the developed propulsive area, and the power to suit it, must be capable of change to meet them before we can expect to secure economical propulsion, or can consider that we have obtained a screw propeller with which a marine engineer can be satisfied.

The screw is the only part of the machinery of a ship which really acts in and upon the water, and it therefore merits primary attention. It—or rather they, for I prefer the position, action and safety of twin screws—should be placed in as "solid" water, and as far away from the influences of eddies as possible. Any point on the circumference or periphery of the boss should revolve at least as fast as the vessel is designed to normally travel through the water. That is, the travel of the bottom acting services of the blades should be capable of propulsion, and not be permitted to exercise a retarding action on the other part, as is frequently the case. This will eliminate the "harmful space" and avoid whirls, air, suctiou, etc., caused by reversed action. The inoperative space should in all cases be covered or masked by a smooth coned boss. The extent or radius of the inoperative space will depend upon the revolutions. Few revolutions compel a larger boss in most cases; quickening the revolutions reduces the necessary diameter of the boss.

It will be seen that the rate of revolution of the engines is one of the first and most important things to be decided, not only for the reason mentioned above, but for others. An additional thrust is produced by quickness of revolution. Quick revolutions will hold up better against a current. The resistance due to the inertia of the water becomes rapidly greater with the increase of speed at which it is operated upon. Just as the hand finds little resistance to slow motion in water, but an almost absolute resistance when it strikes the water rapidly, so does the high speed screw approach the condition of rotation in a solid nut. So we must—within reason and the limit of practicability—not give the water too much time to embrace the screw blades. There are still many old ships merely "stirring it up," comparatively speaking.

If developed propulsive area cannot be got in one way (say by deep draught and the desired circumferential revolution) it can be got in another, viz., by quick revolutions. And wherever we are able to apply both, we ought (in many cases) to get better speeds than have yet been accomplished.

Speaking generally, in regard to screw propulsion, I prefer comparatively short-stroke, quick-acting, non-reversible engines. In relation to the operation of screw propellers, piston speed (employed in the form most desirable to the type) is one of those desirable things of which we cannot have too much so long as it agrees with the constitution of the engines. We cannot without risk attempt to reverse the motion of the revolving masses of water very quickly in a really quick-speed engine of any size. So I suggest that we let it run always at practically the same rate in one direction, and we shall not only gain mechanically, but commercially also, as I shall explain farther on.

Increased revolutions also comprehend reduction of weight and space occupied, reduction in the weight of overhanging screws and fittings, and in the number and width of blades, etc., and it will permit a greater head of water under which the screws may operate. These suggestions have begun to be to some extent adopted in the more modern types, but I submit that much more can be safely done in this direction by the adoption of the system I advocate.

With regard to the area and revolutions, I found it necessary to make an experiment. For the purpose of accurate comparison I constructed and tried a running boat, carrying its own fixed screw and motive power, and operating by clock work (which may be looked upon as a really "constant" power for the purpose of comparison) in still water. I found that letting the clock-work "run free," and commencing with a full-sized screw, I could cut and trim it down to a comparatively trifling area, and yet the boat went as well as ever. The increased revolutions here made up for the reduction of area. Mr. Volk, the electrician, was good enough to advise me that experiments with an electric launch quite corroborated my conclusions on this point. He said: "In endeavoring to remedy a defect, the blades were reduced from time to time till they merely consisted of two thick triangular pieces of about six inches square, each; yet, throughout, the speed of the boat varied very little." Here we have an accidental corroboration by means of another practically constant power. It is difficult to get a really constant power applied in steam trials, as the human and other elements cause some degree of variability.

(TO BE CONTINUED.)

## VESSELS UNDER FOREIGN FLAGS, OWNED OR CHARTERED BY AMERICANS

DURING SIX MONTHS ENDING WITH MARCH, 1894.

Replies from New York, Philadelphia, Boston, Baltimore, Portland, Me., Charleston, Savannah, New Orleans and Galveston have been received by the Navigation Bureau, to inquiry concerning the extent to which American citizens during the past six months have participated in the ocean carrying trade to and from the United States, as owners in whole or in part, or as charterers of vessels under foreign flags.

Seventy-five replies show that Americans at these ports were interested as owners or charterers, chiefly the latter, in 567 different vessels of 804,355 tons, flying foreign flags. Of these 43 vessels, of 85,613 tons are owned by Americans.

The registered American tonnage at these nine ports amounts to 648 vessels of 563,231 tons.

Of the foreign vessels chartered or owned by Americans, 275 steamers of 517,321 tons were under the British flag. (The registered steam tonnage of the entire United States under the American flag amounts to 249 steamers of 261,102 tons.) Under the Norwegian flag 50 steamers of 45,338 tons, and 29 sailing vessels of 21,632 tons were chartered or owned in part; under the Spanish flag 8 steamers of 16,255 tons, and 7 sailing vessels of 3,558 tons; and under the Italian flag 31 sailing vessels of 20,163 tons. Very limited use has been made of German, French or Austrian vessels by American charterers. Following is tabulation of replies.

| | STEAM. | | SAIL. | |
|---|---|---|---|---|
| | No. | Tonn'ge | No. | Ton'ge |
| British | 275 | 517,321 | 70 | 55,790 |
| Norwegian | 50 | 45,338 | 29 | 21,632 |
| Italian | ... | ..... | 31 | 20,263 |
| Spanish | 8 | 16,255 | 7 | 3,558 |
| German | 2 | 5,662 | 13 | 9,545 |
| Dutch | ... | ..... | 1 | 1,740 |
| Danish | 1 | 639 | 4 | 2,264 |
| Austrian | ... | ..... | 6 | 3,728 |
| Portuguese | 2 | 4,352 | ... | ..... |
| Miscellaneous | ... | ..... | 8 | 7,233 |
| Total | 338 | 589,567 | 169 | 125,753 |

| | | |
|---|---|---|
| Steam | 338 | 589,567 |
| Sail | 169 | 125,753 |
| *Galveston | 60 | 89,035 |
| Total | 567 | 804,355 |

*Reply from Galveston gives aggregate without details as to flag, steam or sail.

Following is a statement of number and tonnage of steel vessels now under construction or contracted for, and the number of hands employed on such construction compiled from responses of twenty-one establishments to inquiry of the Bureau of Navigation, Treasury Department. No vessels of iron are reported under construction, nd no steel sailing vessels are noted, the Dirigo, the first steel ship, having been completed and documented during this inquiry.

STEEL STEAMERS FOR MERCHANT SERVICE.

| | Men employed on Work. | No. | Tonnage |
|---|---|---|---|
| Bath, Me | 800* | 2 | 3,600 |
| Newburgh, N. Y | 175 | 1 | 300 |
| Camden, N. J | 200 | 2 | 775 |
| Philadelphia, Pa | 5,775* | 9 | 25,400 |
| Chester, Pa | 650 | 2 | 5,796 |
| Baltimore, Md | 75 | 1 | 100 |
| Jeffersonville, Ind | 100 | 2 | 1,200 |
| Cleveland, O | 650 | 7 | 12,950 |
| Chicago, Ill | 250 | 1 | 3,000 |
| Detroit, Mich | 100 | 1 | 2,164 |
| West Superior, Mich | 100 | 1 | 1,715 |
| Total | 8,875 | 29 | 57,000 |

*5,400 of these employed also on vessels for the navy.

STEEL STEAM WAR VESSELS.

| | Men employed on Work. | No. | Tonnage |
|---|---|---|---|
| San Francisco, Cal | 1,200 | 2 | 16,000 |
| Bath, Me | 800* | 1 | 2,000 |
| Newport News, Va | 800 | 3 | 4,700 |
| Sparrow Point, Md | 75 | 1 | 2,000 |
| Philadelphia, Pa | 5,400* | 6 | 56,000 |
| Total | 8,275 | 13 | 80,700 |

*Employed also on vessels for merchant service.

Note.—It may be observed that the tonnage of merchant vessels is registered tonnage, that of naval vessels is displacement. Thus exact comparisons are not possible. The replies of course do not include government navy yards. In his annual report (page 20) the Secretary of the Navy reports 20 steel war vessels, 115,345 tons displacement, under construction.

The eleventh census reports 21 establishments engaged in building iron and steel vessels, with $33,900,148 capital, 10,767 employes receiving $6,579,063 wages, with a product for the census year of 101 vessels of 148,929 tons valued at $13,256,703. It is understood that the firm of Wm. Cramp & Sons, Philadelphia, is not included in this report. In the statistics of the Bureau of Navigation given above this establishment reports the employment of 5,400 men and a construction of 21,400 registered tons for the merchant service and 56,000 tons displacement for the U. S. navy.

The documented steel tonnage of the United States for 1893 was 65,630; vessels 38, excluding barges.

## GREEN BAY AND THE STRAITS.

The Hart Steamboat Co. will establish a daily line between Green Bay and Cheboygan. As soon as the Fannie Hart and Moore are ready to go into commission the four boats of the line will be utilized for that purpose. Landings will be made at Little Sturgeon, Sturgeon Bay, Menominee, Fish Creek, Escanaba, Manistique, etc., in both going and coming.

## CLEVELAND HARBOR—CUYAHOGA RIVER.

The director of public works, Hon. J. H. Farley, in his annual report to the City Council, states as follows:

"Improvements in the river channel are imperatively needed. The bend immediately above Seneca street bridge, called Collision Bend, could be very materially improved by cutting off the point that protrudes out into the channel some twenty-five or thirty feet beyond the defined, proper deck line—now and for years past in the use and possession of private parties. This much at least should be recovered to the use of navigation, and I recommend that the law and public works departments be authorized by the Council to take, immediately, the necessary steps to recover this valuable channel space to the use of navigation.

"The channel should also be improved by straightening, widening, and deepening at various points, at least as far up stream as what is known as the Grasselli Chemical Works. I hope to be able, with the funds on hand, to at least deepen the channel to this point during the season of 1894 sufficiently to admit of the passage of the fireboats so as to extend protection to the important interests now beyond this means of protection from loss by fire.

"I take issue with my esteemed and able predecessor in his opinion expressed in the report for 1892, wherein he says: 'Deep water dockage I consider impracticable in the main river.' There is nothing impractical and no engineering impediments in the way to prevent the deepening, widening, and straightening of the river channel so as to admit any vessel that can cross the natural barriers in the Detroit and Sault St. Marie's river from passing up the Cuyahoga river to the Chemical Works. In fact the only obstacle to overcome in reclaiming this valuable use of the river is the one item of expense, which when compared with lake front projects and the loss that would ensue by abandoning river improvements is decidedly in favor of river improvements. To divert public funds to artificial harbor work in advance of river improvements is open to the just criticism of unfairness to a large tract of land running through the heart of the city that has for many years borne its full duplicate share of taxation and annual dredging tax without just adequate returns, the proper improvement of which would undoubtedly add large taxable value to the grand duplicate."

# THE MARINE RECORD

ESTABLISHED 1878.

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MAINTAINING speed and giving direction, course or helm signals in a fog without seeing the object signaled to can not be permitted from a legislative standpoint.

THE blasts of the fog horn at Buffalo are unbearable to many of the citizens. Well, "where ignorance is bliss, 'tis folly to be wise." Nor need they know that the bellowing, blasting noise is often pronounced the sweetest sound that ever catches the ear of befogged mariners. How about the whistles of locomotives screeching and bells clanging at grade crossings, even abreast of the doors of some of the "kickers."

RELATIVE to the assumed over-production of tonnage built for lake business, it is somewhat curious to observe that ten vessels were launched on the Tyne last month, and, as they were being equipped for active service no less than seventy vessels were laid up on account of their owners not being able to secure paying freights on cargoes. This looks as if the latest built tonnage could earn dividends when the older class of ships were losing money for their owners.

FISHERMEN from the south shore of Lake Erie will have to be more circumspect in the future when fishing in Canadian waters or they may be captured and tied up alongside the Dunkirk tug Grace which was seized last Sunday for violating the Canadian fishery laws. The tug was caught *flagrante delicto* and is liable to confiscation, but it is to be hoped that the Dominion authorities will decide that the moral effect of a small fine, with the costs involved in the seizure, will be sufficient to deter further depredations. It is only fair to state that the close season has been strictly enforced upon Canadian fishermen, hence, it would be a great dose of moral turpitude if Americans were permitted to enjoy benefits denied to citizens of the Dominion upon their own ground.

THE men who control the steam tonnage of the United States from a legislative standpoint, are having "a hard row to hoe." What with constant protests against their decisions, a supercilious ignoring of the steering and sailing rules formed for the navigation and guidance of steam vessels and a general all round feeling that laid bare means "they don't know what they are doing anyhow," the lot of the supervising inspector-general and his board of skilled mechanicians, is becoming anything but a happy one. Wonder if the present laws and the annual amendments, variations, changes and innovations perpetrated on a law abiding class of citizens were subjected to close scrutiny by the Bureau of Navigation and an engineer board before going into effect would'nt help to straighten up matters a little? Masters, engineers and pilots hardly know to day whether they are acting within the limits of the rules or grossly disobeying in some particulars the inspection service laws. Coupled with this state of affairs, owners are continually harassed through being compelled to conform with either old acts resuscitated and enforced, or new ones for which no adequate reasons are advanced for their being observed, and finally steamers are held in Chicago this week for certificates, awaiting the pleasure, convenience or arbitrary action of the inspection officers before they can proceed on their season's work. If this state of affairs is not enough to make the owners of the dozen steamers captured by the inspectors in Chicago river wrothy, we hardly know what will. Hitherto the legislative control of tonnage has been unquestioned, now the management, chartering, sailing, etc., has also been temporarily assumed by departmental muck-a-mucks who really are the subordinates and not the arbiters of the actions of steamboat owners.

### LOCAL NAVIGABLE IMPROVEMENTS.

The director of public works at Cleveland, O., sounds the tocsin of needed public improvements to local navigable waterways in his annual address to the city council. The idea has become prevalent that nothing can be done towards improving rivers and harbors without a Federal appropriation. So accustomed have we become to the Corps of Engineers, U. S. Army, carrying out all necessary work for the conservancy and protection of harbors and approaches thereto, that the average citizen imagines the general government may be petitioned to expand its resources even to the dredging away of sewage dumped by a municipality into a local waterway miles inland from lines of demarcation marking the harbor or coast limits over which the Corps of Engineers exercise jurisdiction.

It is quite within the bounds of possibility that future legislation may saddle upon the community enjoying the greatest advantages arising from important expenditures at or near their harbors the full cost of such improvements, but at present it should be clearly understood that the port itself takes the onus of keeping open navigable waterways inside the properly established coast lines, and to the citizens alone must navigation and commerce look for a proper appreciation of the natural or artificial facilities offered at such shipping points.

It is a universal truism that well considered river and harbor improvements always amply repay the outlay in facilitating the trade of a port, though too little attention has been paid to this feature in the past at lake ports and rows of rotten piles testify to the spirit of parsimony, if not ignorance and neglect, which has held sway at scores of points during as many years. It is to be hoped that the energetic and well advised action evidenced by the director of public works at Cleveland will be enthused into the more prominent citizens of other ports so that on entering their harbors the "Rip Van Winkle" appearance of utter stagnation in dock and wharf appearances may be changed to sightly, solidly built and approachable embankments, jetties, docks and wharves.

### THE INTERNATIONAL MARITIME CONGRESS.

One of the most important results of the International Marine Conference at Washington in 1889 was a unanimous agreement by delegates from the 29 nations participating upon an improved form of international regulations to prevent collisions at sea. It consists of 31 articles and was enacted in its entirety by Congress in 1890, with the proviso that it should not go actually into effect until proclaimed by the President. This proviso was inserted to allow time for other maritime nations to examine the proposed regulations. International correspondence on the subject shows that the conditions of the fishing industry vary so much on the Mediterranean, the Baltic, North Seas, the English channel and off the Newfoundland banks that a uniform regulation for fishing vessels satisfactory to all has not been and probably can never be framed. Nearly every maritime nation wishes to frame its own regulations on this subject. Accordingly a bill to repeal the ninth article relating to fishing vessels has been introducted in both branches of Congress with the approval of the State and Treasury Departments and all the American delegates to the International conference.

This article is not in force itself, and as matters stand prevents the President from putting the rest of the Act in force by proclamation after notice of say one year. As soon as this obstacle has been removed it is expected that other nations will adopt the new regulations, which in nearly every other respect have been approved by them, though not put into force for the reason named. So far as fishing vessels are concerned, the present regulations will continue in force.

THE 3,761 vessels on the lakes last year aggregated a tonnage of 1,261,067. Of this number 1,205 vessels of 317,809 tons were sailing craft, 1,731 vessels of 828,702 tons were steamers, and the remainder consisting of 825 barges, etc., listed 114,576 tons. According to the last census statistics employes were paid in wages alone $8,140,430 in transporting 53,424,432 tons of cargo.

OUR recent suggestions relative to establishing a mutual marine insurance company for tug boats ruled out of the Inland Lloyd's Register for 1894, has called forth inquiry from several of the smaller owners of this class of tonnage desiring to know what the larger tug lines think of such an innovation. Four of these vessels, now building at Cleveland, will shortly be ready for classification and insurance and the three steel boats ought surely to be considered good risks even if they are small fry, while the oak built boat launched last Monday, is the peer of the staunch handsome boats built at Buffalo, and for which that port holds so enviable a reputation in the line of tug building. Mutual insurance among tug boat owners covering their own fleets does not necessarily imply classification in any register, yet a high class in a good and widely recognized book is an excellent receipt for faithful tonnage to hold under any and all circumstances, as it not unfrequently facilitates business arrangements in chartering even tug boats.

VESSELS registered in the state of New York are exempted from state, county or local taxation upon capital stock of companies, franchises or earnings for the period of thirty years, or up till the year 1922. Why can't the states bordering the chain of lakes rise to a similar elevation and cease obnoxious discrimination against the remarkable commercial advantages which thew now enjoy?

### LAKE FREIGHTS.

The general outlook is dull at all ports, although Chicago grain freights show a trifling tendency for the better, Kingston wheat fetching 3 cents and Buffalo rate advanced to 1¼ cents. Duluth wheat rate is firm at 2¼ cents, and it may well be with only 14.3 feet at the "Soo." There has been some inquiry for Escanaba ore at offerings of 45 cents with no takers heard of at that figure. Some coal is being shipped at Buffalo at the 15 cent Lake Superior rate and 25 cents to Lake Michigan. The Ohio figure is 30 cents to Marine City and Milwaukee, 25 cents Erie to Chicago. Fueling coal is running low all round, owing to the coal miners' strike, and this feature, coupled with the low freights, will tend to lay up a large number of boats in the near future.

### CRIMINAL NEGLIGENCE.

A departure from the usual results of shipwreck with loss of life has been inaugurated this week by shore authorities at Monterey, Cal. It appears that the coroner's investigation into the cause of the wreck of the steamship Los Angeles at Point Sur on Saturday last, resulted in a verdict charging Roger Ryfkogel, the ship's third officer, with criminal negligence. He was taken into custody and will be tried for manslaughter. The testimony before the coroner's jury showed that the third mate changed the ship's course without consulting the master, and doing so after Capt. Leland had particularly ordered that he be called on deck to direct the steamer's course when the Point Sur light should be reached. The hidden rocks on which the vessel was wrecked are some distance north of the light. It was shown, too, that the night was clear and the light in full view, though the accused third officer, in his testimony, insisted that the sky, was hazy. He admitted however, his disregard of Capt. Leland's orders. The bodies of five of the six persons known to have been lost have been recovered.

It is now in order for the U. S. supervising inspector-general of steam-boats to learn if officer Ryfkogel is entitled to still hold possession of his certificate or license, perhaps a coroner's inquest is not a qualified proceeding to deal with the technical intricacies involved in the actions of an officer duly licensed by the inspection service. However, if it can be proved that it was customary for the third mate to alter courses without consulting or acquainting the master promptly of such action, the indictment will fall to the ground, as any officer may be permitted to make and is subject to make an error of judgment without criminal intent or negligence involving a charge of manslaughter.

### RATHER A NARROW VIEW.

Secretary C. H. Keep, of the Lake Carriers' Association, is quoted as saying in his recent communications to Senator McMillan, that the people along the lakes look to the Senate to give them decent treatment on the sundry civil and river and harbor bills. Mr. Keep points out that government millions are being poured into the southern streams, while the great waterway of the lakes gets insignificant recognition. He adds:

"Not for many years have the requirements of these projects been anywhere near as small as the provision for them this year. On the other hand, the sundry civil bill contains appropriations of some seven or eight millions of dollars for contract river and harbor work in other parts of the country, principally on the Mississippi and Missouri Rivers and the southern harbors."

Mr. Keep says the need of more lights along the lakes is imperative, and he designates a number which Mr. McMillan will try to have added to the bill.

All of which may be very true, but narrow minded, carping criticism of what other important waterways are securing from the Federal goverement is not the way to gain recognition of or for lake necessities in the form of aids to navigation. The "inland seas" are justly entitled to the best consideration of the river and harbor committee; at the same time it should be remembered that there are other waterways in the United States which also may claim a fair share of attention at the hands of our national legislators, nor, is it either politic or necessary at this date to belittle the Southern harbors and the "Father of Waters" in an effort to secure larger appropriations for river and harbor improvements on the lakes.

### THE CLEVELAND CHAMBER OF COMMERCE.

Mr. Luther Allen, secretary and treasurer of the Globe Iron Works Co., and the recently elected president of the Chamber of Commerce, rapped straight out from the shoulder in his inaugural address in the following trenchant excerpt:

"Gentlemen of the Chamber of Commerce, it rests with you to make it so vital, so forceful in its field of activity as to deserve the approval of the whole community, regardless of class, of religious faith or political affiliations. This fair city of ours—the largest between the two great cities New York and Chicago, and far enough from both not to be overshadowed by either—is rapidly reaching a commanding position among the first cities of our country. Already the metropolis of Ohio, it is advancing steadily upon its nearer competitors in population and wealth throughout the United States, and it requires but determined effort to place it among the greater cities of our land—to make it indeed a 'Greater Cleveland.' It is a gratifying fact that loyalty to the city of Cleveland is day by day increasing. It is no longer the fashion among its inhabitants to stigmatize it as "an overgrown village," or to draw invidious comparisons between it and its neighbors. It has in truth become a metropolitan city with metropolitan ideas and attainments. Let it be the duty of this chamber to see to it that no backward step is taken, that no narrow provincialism, no false economy stops the progress we are making. Remember this: even as a river rises no higher than its source, a city rises no higher than its citizenship. A city can be made just what its people desire it to be, broad, liberal, energetic, magnetic, strong in purpose, always ready—or narrow, parsimonious, nerveless, repulsive, vacillating, procrastinating. These are the types. Upon which model will you build the 'Greater Cleveland?' "

### A THRIVING BUFFALO INDUSTRY.

It may have been thought by some vessel men that owing to recent business difficulties the Bell Steam Engine Works of Buffalo would not again enter the lists of competition for marine favors. However, we now find that David Bell is to the fore with his old time vigor, and last week shipped to the order of Rogers & Bird, Saugatuck, Mich., a complete tug outfit, and this week an engine, cylinders, 10 by 12 has been sent to Mr. J. C. Hoyt, Pearle, Mich., while another engine 12 by 14 has just been contracted for by a firm in Wilmington, N. C., besides orders for steam hammers and other miscellaneous work on hand.

It will be a pleasure for many of our readers to learn that the pioneer metal ship builder on the lakes, and a man who is so chock full of business integrity as David Bell, is not by any means going to leeward in the race for reputation and ducats.

### VISIBLE GRAIN SUPPLY.

The stocks of grain in Chicago elevators and afloat last Saturday evening were 20,521,000 bushels of wheat, 6,945,000 bushels of corn, 547,000 bushels of oats, and 194,000 bushels of rye. Total, 28,207,000 bushels of all kinds of grain, against 24,547,000 bushels a year ago. For the same date the secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada as 68,425,000 bushels of wheat, 14,566,000 bushels of corn, 2,659,000 bushels of oats, 369,000 bushels of rye and 299,000 bushels of barley. These figures are smaller than the corresponding ones a week ago by 792,000 in wheat and 1,455,000 in corn. The visible supply of wheat for the corresponding week a year ago decreased 1,227,000 bushels.

### AMERICANS OWNING FOREIGN TONNAGE.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., April 20, 1894.

I have the honor to enclose statistics tending to show the extent to which Americans own or charter vessels under foreign flags. Two hundred circulars of inquiry were sent out and seventy-five replies have been received. Besides the nine ports named, San Francisco and Port Townsend were requested to furnish information, but have not yet replied.

The statistics are incomplete even within the scope of the inquiry, limited to the eleven large seaports, as some firms have made no reply. The registered American tonnage for 1893 was 1,343 vessels, 899,802 gross tons. Some of the returns tabulated were expressed in net tons, so that the aggregate gross tonnage of the tabulation would exceed the aggregate American registered tonnage.

The returns, of course, do not include any of the great trans-atlantic passenger lines, the vessels of which are not chartered. No attempt has been made to ascertain the ownership of stock in these companies, but it is understood that the International Navigation Co., (American capital) owns and operates under the British flag the Berlin, 3,302 tons, the Chester, 2,944 tons, and has a large interest in the steamers of the Red Star Line, under the Belgian flag, of an aggregate tonnage of about 18,000 tons.

Full returns, if obtainable, would doubtless show that Americans own and operate under foreign flags a steam tonnage equal to or greater than one-half the steam tonnage registered under the American flag.

It is understood that none of the vessels in the returns tabulated receive any subsidy, either directly or in the form of mail compensation from any government. They are to be taken solely tools of commerce.

The charters are of varying terms, some of the vessels being employed only for single voyages, others for several voyages from different ports, and others running regularly under charters covering one or two years.

Generally speaking the statistics seem to show: 1st, that American capital is invested in the ocean carrying trade to a much greater extent than is indicated by the returns of registered American tonnage. 2d, that while the laws forbid Americans to purchase outright vessels of foreign build—except wrecks repaired in this country—and operate them under the American flag with officers and crews of their own selection, Americans nevertheless are purchasing or chartering foreign vessels to meet the requirements of our foreign trade, and operating them under the British, Norwegian and Italian flags, with officers and crews presumably of those nationalities.

No effort to ascertain the number of men employed on the 567 vessels of 804,355 tons has been made, but a rough estimate is between 30,000 and 35,000 men.

Respectfully yours,
EUGENE T. CHAMBERLAIN, Commissioner.

### TRIAL TRIP OF THE HARVEY H. BROWN.

The handsome steel steamer Harvey H. Brown was taken out on her trial trip on Saturday last and after about four hours' spin on the Detroit river to Lake St. Clair and return, it was pronounced by a large party of vessel owners that the Brown represented the highest type of modern steel freight steamers, though all regretted that Harvey H. Brown, of Cleveland, in whose honor she was named, was not aboard to witness her virgin successes.

The engines were turned over from 85 to 92 revolutions per minute to test the steaming qualities of the Howden forced draft, and while the pop safety valve could be kept blowing there was no lack of steam. The handling qualities of the ship, the entire absence of vibration at various revolutions in deep or shoal water, as well as the smooth working of her new machinery, called forth expressions of admiration from the leading vessel men of Detroit who were on board, and Capt. E. M. Peck, president of the Northwestern Transportation Co., to whose order the Brown was built, was well pleased with her in every particular; at the same time it is putting it mildly to say that Mr. H. H. Brown may well feel proud of his floating namesake.

The H. H. Brown was built at the Wyandotte yards of the Detroit Dry Dock Co., and the machinery and outfitting were put in at their works in Detroit. Her length over all is 363 feet 8 inches, making her a few inches longer than the Selwyn Eddy, but otherwise the two boats are sister ships. The Brown is equipped with a triple expansion engine, built at the Dry Dock engine works, with cylinders 22, 35 and 56 inches diameter, respectively, and 42-inch stroke. She has two Scotch type boilers, each 13 feet 6 inches diameter and 12 feet long. A great saving of fuel is secured with forced draft, and her equipment includes all modern appliances. The entire vessel is provided with a complete system of electric lighting, furnished by the F. P. Little Electrical Construction & Supply Co., of Buffalo. The system is controlled from a handsome switchboard of Tennessee marble, from which lights are turned on to any part of the ship, inside and out, and a powerful arc searchlight is placed on the front of the pilot house. Several large portable lights are also provided, which can be connected in a moment and carried about the vessel or hung up wherever needed. The current is generated by a powerful dynamo made by the Detroit Electrical Works. The electrician in charge of the work is Henry R. Ford, of Buffalo.

The carrying capacity of the new competitor for lake freight is 4,000 tons or 160,000 bushels of corn. Her coal bunkers for fuel will hold 200 tons of soft coal, and can be filled in twenty-five minutes from a coal shute. The principal officers of the vessel are: Captain, Ed Garfield; first mate, John Hand; chief engineer, Joseph Powell.

### OBITUARY.

HENRY F. MCGINNESS.

One of the best known old time marine engineers on the lakes died at his home, 728 Lorain street, Cleveland, on Tuesday morning, after an illness lasting several months.

Mr. McGinness served his time with Thomas Manning of Cleveland, and about thirty years ago was second engineer with Mr. Robert Wallace, now president of the Cleveland Ship Building Co., when the latter gentleman was chief in the old M. T. Line. Engineer McGinness was later chief in the Black Line, as the old Hanna fleet was known, and sailed with Capt. Geo. P. McKay in the Ontonagon in 1868-69. He was also shipmates with him in Sparta and he started out with the first triple expansion engine built by the Globe Iron Works Co. for the steamer Cambria, though his last sailing was in the Ohio and the George G. Hadley. Desiring to remain ashore, the late Mr. McGinness engaged in the plumbing and gas fitting business about three years ago and he prospered fairly well until his health gave way, and for the last two months he has been confined to his house.

Henry McGinness was known among the fraternity at all lake ports and very many of his old time friends will be grieved to learn that he has been called hence at the early age of fifty-two years. He leaves a wife and four children, also a mother, sister and brother, the latter being the courteous John T. McGinness at present outside manager at the Globe shipyards.

### MASTER'S AND ENGINEER'S APPOINTMENTS.

The Crescent Transportation Co., Cash P. Taylor, manager, Detroit, Mich.: John M. Nicol—captain, Albert Stewart; engineer, Geo. E. Tretheway. John V. Moran—captain, Robert Rhynas; engineer, Geo. F. Lynn. Wm. H. Stevens—captain, Louis Elliott; engineer, John S. McSweeney. Eber Ward—captain, Wm. McLean; engineer, Jas. E. Purvis. Jas. Fisk, Jr.—captain, Murray G. McIntosh; engineer, Elmer Tucker. S. F. Hodge—captain, Norman McGuire; engineer, John R. Judge.

Eddy-Shaw fleet, Bay City, Mich.: Selwyn Eddy—captain, Howard L. Shaw, Bay City; chief engineer, R. Hill, Geneva, N. Y. E. C. Pope—captain, Robert McDonald, Cleveland, O.; chief engineer, Henry Annett, Detroit. Charles A. Eddy—captain, William E. Chateau, Parish, N. Y.; chief engineer, Andrew Carter, Detroit.

### BULLETIN ON THE CAPSTAN-HEAD.

Capt. Joe Roleau has placed the buoys in St. Mary's river and the stage of water at the Soo is 14 feet 3 inches.

The United States man-of-war Michigan has been ordered to Detroit in May to make a survey of the Detroit river.

As a matter of record, the Anchor Line steamer Mahoning left Duluth harbor at 4:30 on Wednesday afternoon, April 18th, laden with a full cargo of flour for Buffalo. The tug Record preceded her to clear the way through the ice, which extended for several miles out in the lake. The tug returned about 8 o'clock in the evening. The first departure last year was on May 7th, the steamship Fiske, but she lay in the ice just outside the harbor for several days without being able to release herself. The first arrivals at Superior and Duluth were the Centurion, Gratwick and Gilbert.

The Western Transit liner Hudson, Chicago to Buffalo with grain and flour, ran ashore on Sunday morning about three miles above Fort Gratiot light, on the Canadian shore. A dense fog covered the lake at the time, and the steamer was running about half speed when the accident occurred. Capt. Dessette, of the Hudson, states that the fog signal at Fort Gratiot did not commence to blow until he had been ashore over an hour, and as he could not see the light, he had nothing to steer by. Assistance was promptly sent and the steamer came off.

The lowest rate on grain ever made from Milwaukee to a Lake Ontario port was accepted last week for the steamer W. H. Sibley. She loaded 50,000 bushels of barley and 10,000 bushels of oats for Oswego at a uniform rate of 2½ cents per bushel. The return freight of the Sibley from Oswego undoubtedly will consist of coal at 55 cents per gross ton, says the *Wisconsin*, out of which a tribute of 20 cents per net ton will have to be paid to the Canadian government for Welland canal tolls. With such freights the size of their bank accounts becomes a matter of vital importance to vessel owners.

Some legislation is probable during the present Congress looking to the abolition of the offices of collectors of customs at a number of the smaller ports. It is asserted that the expense of maintaining the smaller customs houses is unnecessary and simply results in useless expenditures at the ports where they are now established. A bill on this subject is now before the House committee and has been given some consideration. It proposes to discontinue forty offices, including the one at Grand Haven, Mich.

Capt. Adolph Frietsch, of Milwaukee, who intends to sail across the Atlantic to Norway in the thirteen-ton schooner Nina, has taken out his clearance papers. The Nina will leave Milwaukee in a few days for Buffalo, where a stop of several days will be made for exhibition purposes. Seamen who have inspected the craft say that she will never live in the Atlantic if she meets any moderately dirty weather. The doors in the cock pit, they say, are badly arranged and the windows are of common window glass. Added to this, the boat is flat-bottomed. Frietsch, however, is a thoroughly seasoned man of robust physique, in fact, a modern Viking, brought up on salt water, and he is an excellent navigator, so that if Norwegian grit counts for anything in paddling to the eastward across "the pond," he will get there or be picked up paralyzed in the attempt.

James A. Lawrie, late civil and mechanical engineer of the Solar Refining Co., Lima, Ohio, has leased the shops of the Soo City Machine and Boiler Works at the Union Dock, Sault Ste. Marie, Mich., for a term of years, and is prepared to do a general line of machine and boiler work. A full line of engines, boilers and general machinery can be furnished direct at manufacturers' lowest prices, owing to special trade facilities which Mr. Lawrie has made in his former connections.

## SEE'S QUADRUPLE EXPANSION ENGINE.

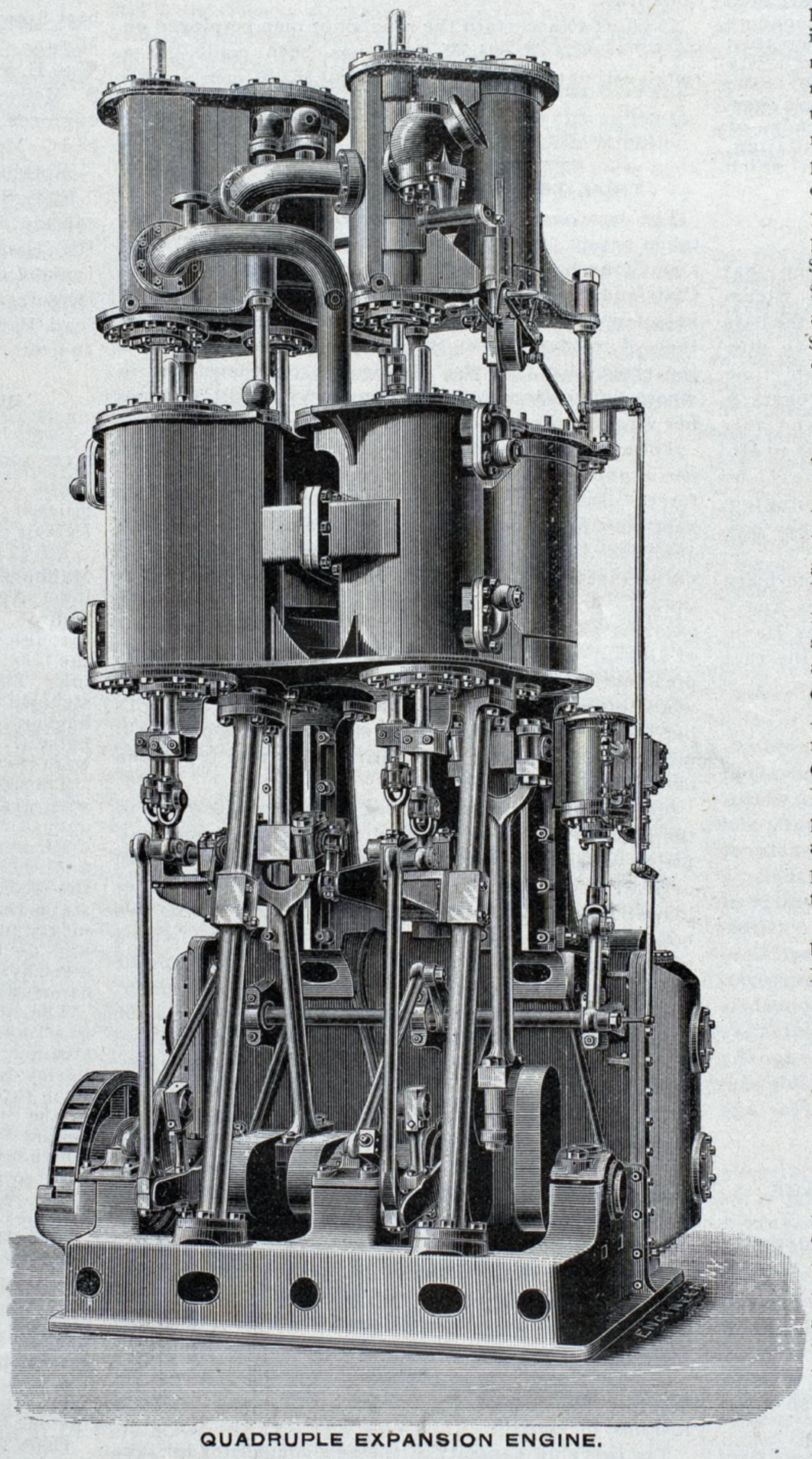
(*American Shipbuilder, New York.*)

ILLUSTRATED.

Two of the most important points to be considered in connection with the machinery for steam vessels—yachts and tugs in particular—are economy in fuel consumed and the saving of space occupied by the engine and boiler. The engine shown herewith was designed by Horace See, of 1 Broadway, New York, and is in successful operation in this harbor on the steel tug El Toro, built at the Newport News (Virginia) Shipbuilding Works, for the Morgan line, at this port. This vessel was constructed from the specifications and under the superintendence of Mr. See, who is giving considerable attention to the designing of handy, roomy and economical steam vessels. The El Toro is a fine example of a vessel combining these features, handling with much ease, while her engine and boiler take up less fore and aft space than those of the ordinary two crank double compound type, to say nothing of the three crank triple compound; the coal consumption is at least 30 per cent. below that of boats with double compound engines of the same power. In addition to this, her engine can be warmed up at the start much quicker than any of the lower types of steam engines of the same power, as the range of temperature in cylinders when at work is much less than in the others.

This type of engines is particularly adapted for yachts, where fore and aft space is of so much value for passenger accommodations, while coal endurance is an important factor, frequent stoppage to coal up being not only a great nuisance, but also an item of additional expense. The El Toro is a staunch iron boat of the following dimensions: Length over all, 90 feet; beam, moulded, 19 feet; depth, 10 feet 9 inches. The deck house is of iron, fitted with round side lights throughout. The boat is steered by steam, the steering engine being located below in the main engine room in a convenient position for proper care and attention. The main engine is of the vertical, surface condensing, quadruple expansion type, with two cranks working at right angles to one another, two pistons being connected and arranged tandem to each. The cylinders are 9¾, 13½, 18¾ and 26 inches diameter, respectively, with 22 inches stroke of piston. Steam of 180 pounds pressure is employed. The lower cylinders are bolted together, and supported on one side by two columns, which are cast on the condenser, and on the other by two wrought iron columns fastened to the bed-plate. The cast columns also form the guides, which are of the slipper slide variety, with water circulation through the go-ahead face. The front of the engine is open for examination of the journals. The upper cylinders are bolted together, each one being supported on three columns secured to the lower cylinders. All of the cylinders are fitted with piston slide valves operated by the See-Marshall valve gear, and reversed by steam gear from the upper platform. All of the main steam piston and valve rods are fitted with the See metallic packing. The condenser is fitted with brass tubes and sheets. An independent centrifugal circulating pump supplies the condensing water. The air pump is driven from the after cross-head, as are also the feed and bilge pumps. There are also two independent vertical feed, fire and bilge pumps. The circulating pump is also provided with a bilge suction for pumping out the boat. An extractor is furnished to remove grease, air, etc., from the feed water. The propeller shaft is covered with brass at the water end, which revolves on a lignum vitæ bearing; the wheel is a solid true screw of iron, 7 feet in diameter. The boiler is of steel, and of the cylindrical return tubular type, fitted with two corrugated furnaces leading into one common combustion chamber. It is 9½ feet diameter by 10½ feet long, and was built by Hammond & Coon, of Buffalo, N. Y.

Following is the performance of the tug El Toro for the last fiscal year: Steamships towed from the company's piers to Erie Basin, or a distance equal thereto, 64; steamships towed from Pier Nos. 37 to 25, 130; steamships docked at piers Nos. 37 and 25, 167; lighters towed and moored, 601; miles run without tow, 4,589; on fire duty, remaining time; days in commission, 349; coal consumed per day, 1¼ tons. The full pressure of steam was kept on the boiler for the entire 24 hours. Boiler run four months without opening.



QUADRUPLE EXPANSION ENGINE.

THE navy department settled with the Boston Towboat Co., for the fruitless effort to save the Kearsarge by the payment of $8,500 in reimbursement of the expense of sending the Orion to Roncador reef.

## MARITIME LAW.

### BEACH & AL. v. STEAMSHIP AMERICA.

*U. S. District Court, Southern District of New York.*

NON-DELIVERY OF CARGO—BREAKAGE PRODUCTION OF REMAINS OF PACKAGE—BILL OF LADING—SEA PERILS. Though a ship does not produce the remains of casks alleged to have been broken by perils of the sea, the fact that the casks were actually received on board is a matter of proof, and the absence of such remains is not necessarily conclusion of bad faith, and when the testimony is explicit that the casks were well stored, and is coupled with evidence of heavy weather and the breaking of a number of casks, a decree will be given for the ship under the exceptions of a bill of lading of insufficiency of package, breakage and perils of the sea.

Brown, J.

New York, Feb. 15, 1894.

### STANTON vs. THE W. A. LEVERING.

*District Court, S. D. New York.* January 18, 1894.

COLLISION—STEAM TUG AND SAIL—CLOSE APPROACH—CAUTION. A steam tug which attempts a close approach to a sailing vessel for the purpose of collecting her towage bill is bound to approach with care and skill, and with due regard to the motion of the sailing vessel; and a tug which, under such circumstances, failed to approach a yacht parallel with the latter's course, and delayed reducing her speed, by reason of which collision ensued, was held liable for the damage.

In Admiralty. Cross libels for collision. Decree for libelant, and dismissing cross libel.

Brown, District Judge.

### HALL vs. THE SACHEM.

*District Court, S. D. New York.* February 15, 1894.

SEAMEN'S WAGES—DISCHARGE ABROAD—IRREGULAR HEARING BEFORE CONSUL. Where, on the question of the competency of a seaman, there has been a hearing before a consul, and a proper record preserved of his decision and judgment, it is ordinarily entitled to full credence; but, where there has been no hearing, no judgment and no record, a forced discharge abroad is illegal, and it is no defense that it was abetted by irregular action of the consular office.

In Admiralty. Libel for seamen's wages. Decree for libelant.

Brown, District Judge. The evidence of incompetency of the libelant as cook, is not to my mind, satisfactory. It is certain that after the arrival of the ship at Hong Kong, the captain was determined to get rid of the libelant as cook, and it is equally certain that the consul before whom both went, endeavored to favor the captain's wishes, while he at the same time refused to afford the libelant any opportunity to prove his capacity or fitness for the place. The captain made no charges against him in the log until after the seaman had been sent ashore. The alternative was forced upon him either to go back on board the ship and be disrated, or else to be discharged at Hong Kong; and that, without any hearing on the merits. This was an injustice to the libelant, and apparently an abuse by the consul of his position and influence.

Where a hearing has been had on the merits, on the demand of the master, or the seaman, and a proper record preserved of the consul's decision and judgment, discharging the seaman, it is ordinarily entitled to full credence, notwithstanding the contradictions made by the seaman afterwards, such as I have not unfrequently had in previous cases. In the present case, there was no hearing, no judgment, and no record, so far as the testimony shows. The libelant was paid $200, his wages up to the moment of discharge, which he received under protest. Such a forced discharge, with no hearing on the merits, at a distant place, and with no pay beyond the day of discharge, is inhumane and opposed to the policy and the statutes of this country, (Rev. St. § 4580) and it is no defense that it was abetted, so far as appears, by the irregular action of the consular office. The libelant was unable to obtain employment to return from Hong Kong, and took passage for San Francisco at an expense of $196, and thence to New York at an expense of $91.50. To this I add one month's wages, $40, all of which, with the interest, amounts to $347.15, for which a decree may be entered with costs.

## A GREAT WINDLASS.

There is no windlass more generally used than the Providence windlass. It has been adopted on many merchant vessels and all of the ships of the new navy have been equipped with the invention. It is interesting to note the general use of the Providence windlass by the United States Navy. It has been furnished the following ships: Battle ships, Iowa, Massachusetts, Indiana; armoured battle ship, Texas; armoured cruisers, Brooklyn, New York, Maine; coast defense monitors, Puritan, Miantonomoh, Amphitrite, Monadnock; practice cruiser for naval cadets, Bancroft; gunboats, Yorktown, Concord, Bennington, Petrel; dynamite cruiser, Vesuvius; dispatch boat, Dolphin; partially protected cruisers, Chicago, Philadelphia, Newark, Atlanta, Boston, Detroit, Montgomery; protected cruisers, Columbia, Minneapolis, Baltimore, Cincinnati, Raleigh.

The "Providence" windlass is manufactured by the American Windlass Co., of Providence, R. I. The firm has been in existence since 1857.

THE naval appropriation bill as prepared by the naval affairs committee of the house contains a provision granting naturalization papers to all foreigners who served in the navy and marine corps for five consecutive years, and who have been honorably discharged.

THE owners of the steamers Lora and Ossifrage have arranged for an exchange of boats. The Lora goes to Duluth and will be operated by the Smith-Fee Co. and the Ossifrage will trade between Bay City and Alpena. The reason of the change was the shallow harbors on the west shore of Lake Huron which the Lora was too deep to enter.

## PROPOSALS.

TREASURY DEPARTMENT United States Life-Saving Service Washington, D. C., April 20, 1894. Sealed proposals will be received at this office until 2 o'clock p. m., of Thursday, May 10, 1894, for the construction of eight 26-foot self-righting, self-bailing lifeboats with water ballast and center board, for use on the Great Lakes. Bids will be received for one or more of the boats, but bidders must state the time they will agree to complete and deliver each at Chicago, Ill. Forms of proposals together with plans and specifications and all other necessary information can be obtained upon application to this office, to the Superintendent 9th Life-Saving District, Buffalo, N. Y., to the Assistant Inspector 9th and 10th Life-Saving Districts, Detroit, Mich., or to the Assistant Inspector 11th Life-Saving District, Custom House, Chicago, Ill. S. I Kimball, General Superintendent. 17-18.

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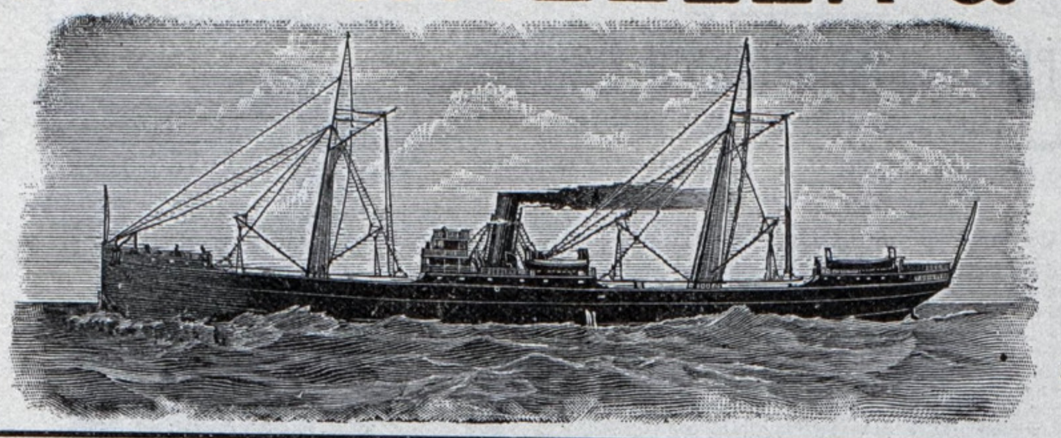

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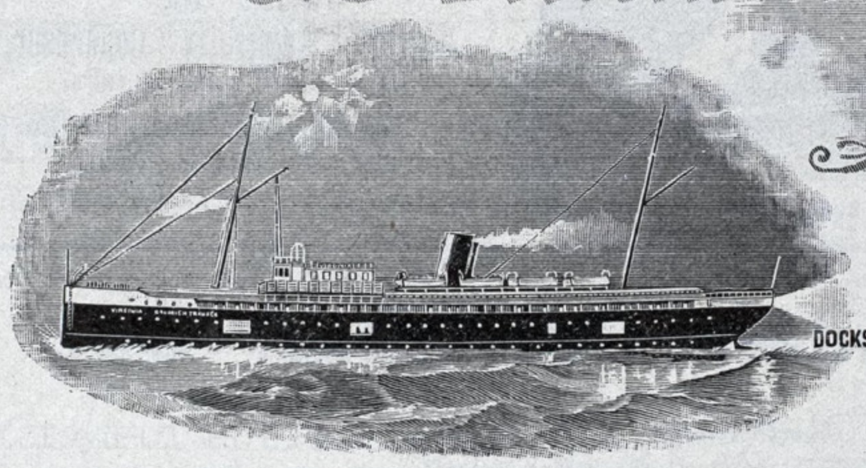

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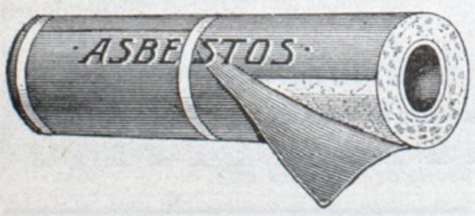


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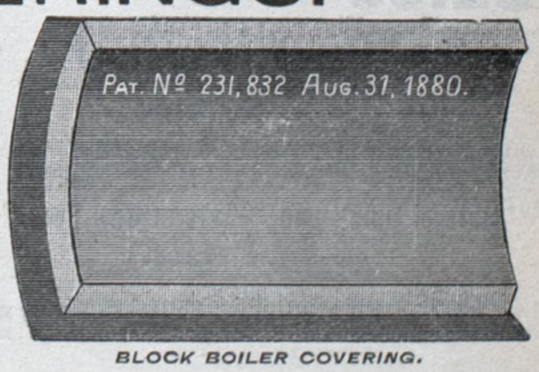


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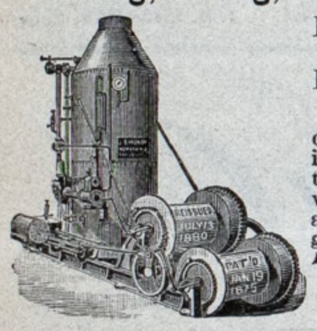

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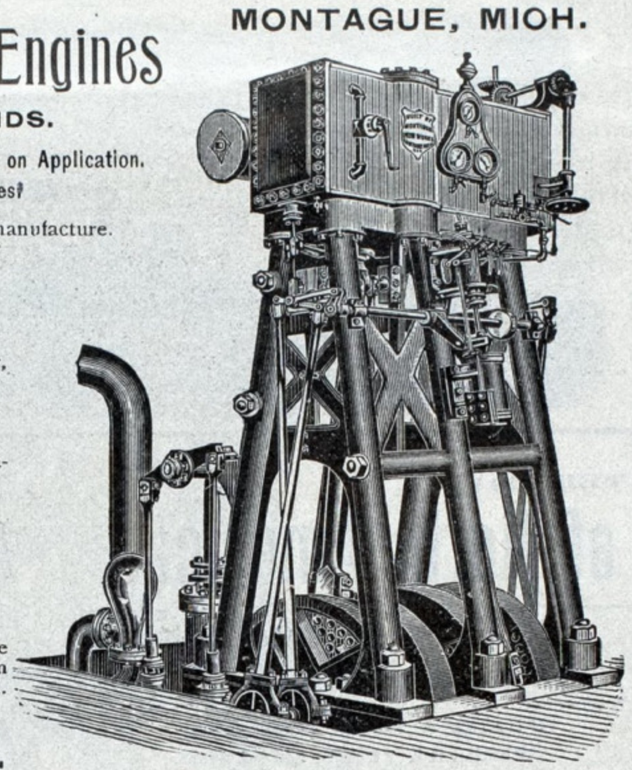

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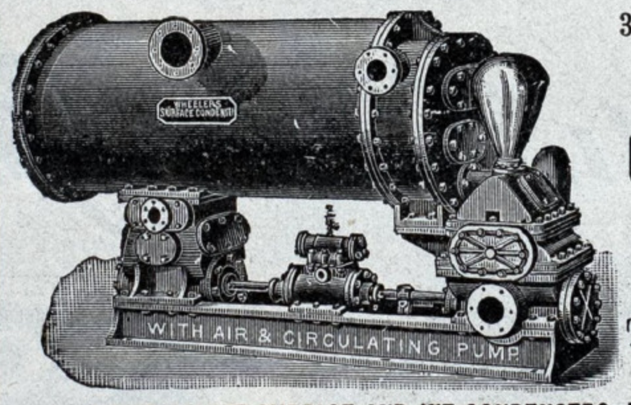


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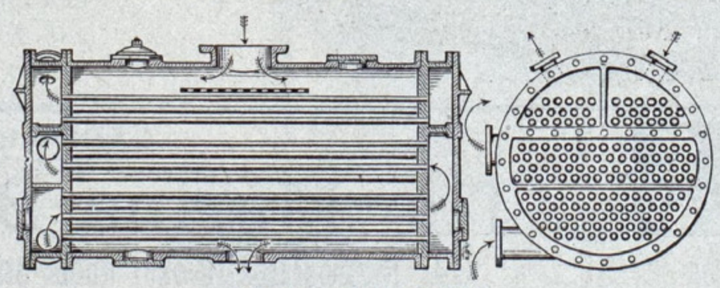

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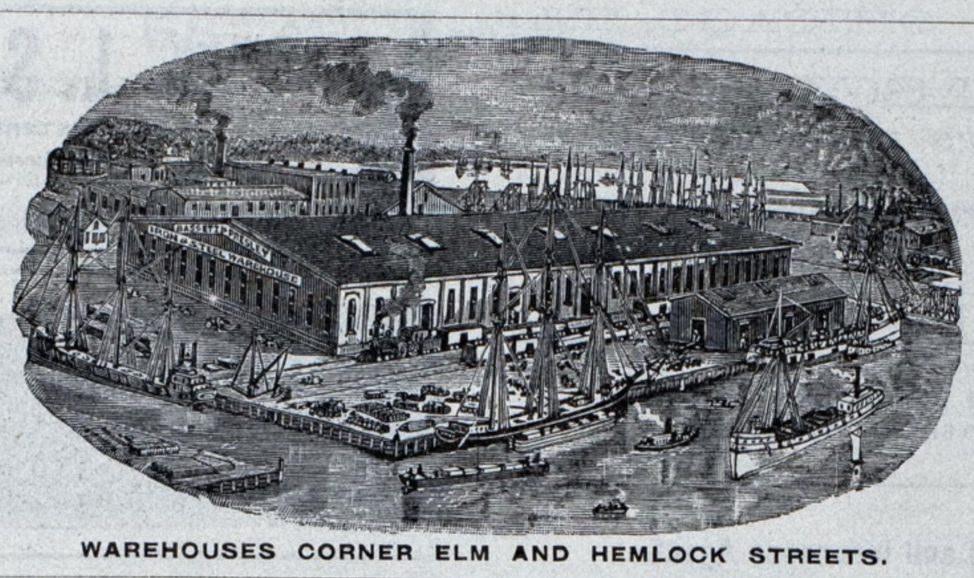

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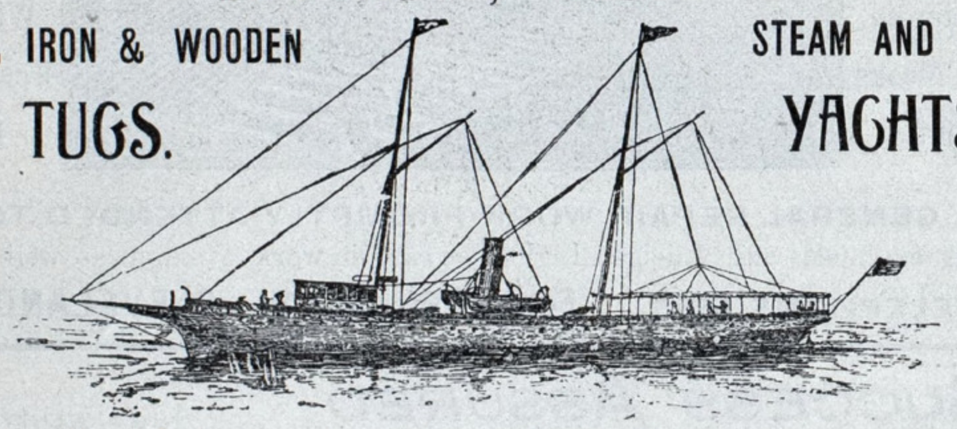

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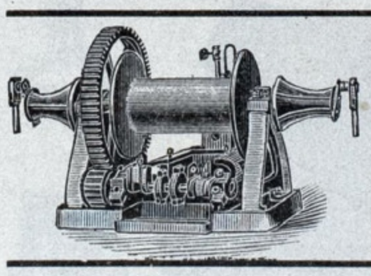

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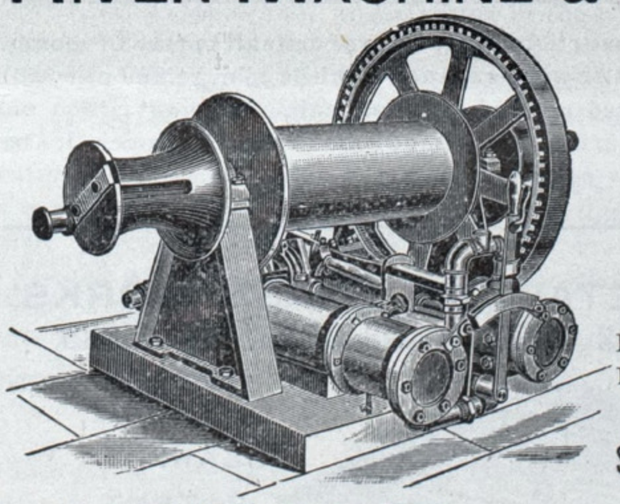

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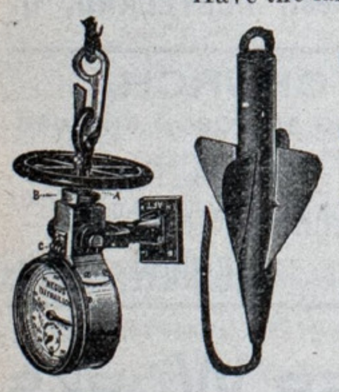

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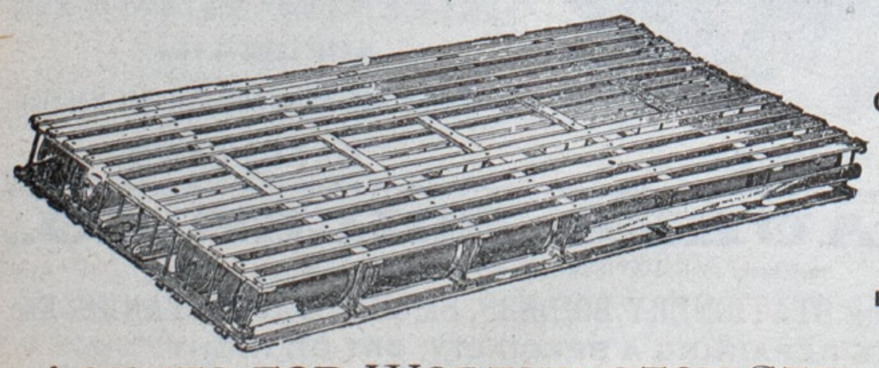

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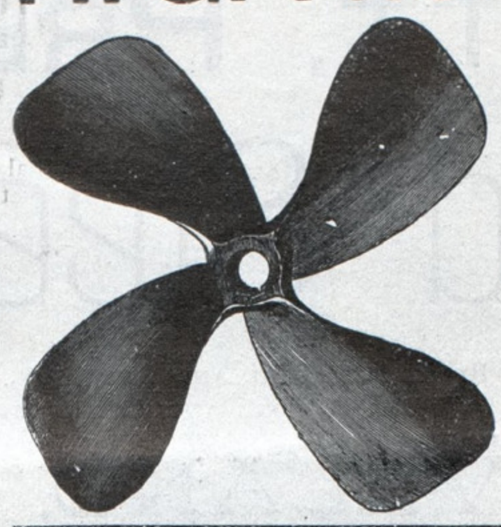

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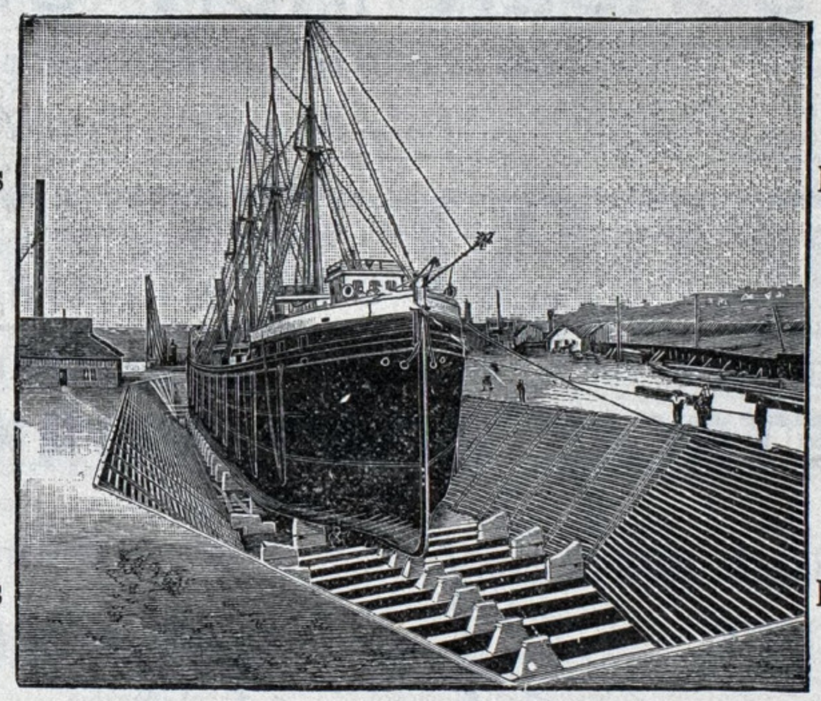

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